Eatman

TEXAS HIGHWAY DEPARTMENT

Construction & Maintenance

BULLETIN No. 9

Nov. 1951

"EVERGREEN ROUTE"

(103) Near Lufkin

Foreword

This bulletin is published for the purpose of presenting practical information applicable to current highway problems. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions. Employees are invited and urged to submit suggestions and relate experiences which would benefit those engaged in the construction and maintenance of highways.

Photographic services are available and other assistance may be obtained if desired in preparing material for submission. All material and comments should be directed to the Chief Engineer, Construction & Maintenance, Austin, Texas.

Published Jointly by

Maintenance Division	**D- 3**
Equipment & Procurement Division	**D- 4**
Construction Division	**D- 6**
Traffic Services Division	**D-16**

COMPILED AND EDITED
INFORMATION SECTION,
TRAFFIC SERVICES DIVISION
REPRODUCED
OPERATIONS DIVISION
TEXAS HIGHWAY DEPARTMENT
AUSTIN 14, TEXAS

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AS WE SEE IT!

The conservation of our equipment through care, correct application and practical "preventive maintenance" has always been a major consideration of the Department.

But it took the war, when our equipment depreciated to a critical stage, and keeping our equipment rolling was recognized as essential to ultimate victory, to drive home the full meaning and possibilities of conservation.

Today we can profit well from the lessons taught by the war emergency.

For thousands of us found out that conservation would increase the service life of our equipment indefinitely and — what's more important — we learned what this longer, uninterrupted service can mean in terms of maintenance and operation economies.

During the war, conservation was a "must." Two years ago, it was just sound, common-sense business practice. Today it is a "must" all over again.

In the advent of an emergency, the sale of new equipment could be frozen within twenty-four hours by the well-organized defense agencies already in operation.

It may be later than you think!

Roadside Park Rehabilitation

Traffic Services Division

In the early thirties the Texas Highway Department began construction of roadside parks and turnouts to provide safe and adequate facilities along the highways for the traveling public to rest and relax from strenuous driving. These facilities became so popular that by 1941 several hundred had been built covering every section of the state. They varied in size from narrow strips to several acres with numerous designs and all sorts of park fixtures. It is not surprising that during such rapid expansion of a new service, some of the park sites and the subsequent development failed to serve the purpose for which these facilities were intended. Of all the various ideas advanced regarding location, size, design of park layout and fixtures, emphasis was placed on simplicity, utility, and low cost maintenance.

Prior to the roadside park rehabilitation program, a survey of all facilities was conducted to determine suitable sites, a well-planned system, and the design of park layouts and fixtures that would render adequate service at minimum cost. Sites not suitable for park purposes and those not justified are being returned to former donors or converted to other uses. Park areas, larger than required, often have been reduced in size by placing guard posts or cable fence around the sides and back of the area that is needed or intensive maintenance is given for park purposes. Elimination of sites and reduction of area, where warranted, have greatly reduced maintenance cost.

To serve the traveling public several types of park facilities are needed; consequently, a "Standard Type" park, as suggested by field forces, would not meet all requirements. With intelligent planning, park facilities may be developed to serve multiple uses. Careful selection of sites is of primary importance to construct scenic overlooks, turnouts, rest stops, and picnic areas with adequate sight distance along the highway to permit safe ingress and egress. Scenic overlooks, turnouts, and rest stops may be built on a minimum of 120 feet of right of way. Picnic areas may vary from half an acre to several acres. In general, picnic areas from half an acre to one acre are of sufficient size.

When roadside development funds were made available, rehabilitation of existing park facilities was given preference over construction of new ones. Those located on primary highways, carrying the most traffic, received first consideration. Prior to preparation of plans, each site to be rehabilitated and new ones to be constructed are surveyed. The survey includes existing choice trees, previous major improvements, grades, etc., which are plotted to scale on quarter-sized sheets. With the aid of such accurate survey, a layout is designed to meet the requirements of each park facility and to keep construction and maintenance cost at a minimum. In addition to layout plans, the necessary construction details are prepared and plans for specified fixtures are included with each set of plans. The completeness of plans enables the field forces to undertake the project at opportune times over an extended period without the presence and supervision of the Landscape Adviser who may not be available on short notice.

The design for park facilities differs due to various requirements and existing conditions at each location. However, if similar requirements and conditions exist among two or several sites, a different design for layout is used to overcome sameness and monotony. Standardization has no place in roadside improvement; it should be avoided as much as possible. There are certain basic design features which are incorporated with layouts for all types of park facilities. They serve to keep construction and maintenance cost at a minimum, provide for easy ingress and egress, and spacious but restricted parking of vehicles within view of the highway. Restricted parking discourages camping, undesirable activities, and damage to park fixtures, trees, and grounds. All features combine to enhance the appearance of the park site.

When constructing park facilities, spacious entrances are emphasized by low walls with colorful low-growing shrubs planted behind them. Park road and parking strip are built behind an island of variable width that separates the park road from highway pavement. Some park facilities may have a broad parking area in front that is connected with highway pavement. All traveled portions are stabilized with a minimum of four inches of compacted flexible base material and single asphalt surface treatment or pre-mix asphalt. To enforce restricted parking, a ten-inch high curb connects both entrance walls. Openings from five to six feet in width are provided in the curb for pedestrian passage. Entrance walls and curbs may be built from choice stones, bricks, concrete tile blocks, or other suitable and available materials. In lieu of curbing, low guard posts or steel cable fence may be used. Curbing is preferred because it does not interfere with mowing operations and has a more attractive appearance. Any openings at each end of park site, where vehicles may pass through, are closed by low guard posts on five to six feet centers or by installation of low steel cable fence. The rear area of the site is enclosed with a well-constructed, neat looking fence. Salvaged guard mesh wire at the bottom and two strands of barbed wire at the top make an excellent fence. Table, benches, and fireplaces are placed on spacious four-inch concrete slabs at shady locations. If natural shade is not available, or is insufficient, arbors are built over park fixtures. Fireplace may be placed on the leeward side on the same slab with table and benches or may be placed separately within a reasonable distance. The most convenient and sanitary garbage dispenser is a Garbage Disposal Well. Since it is flyproof and odorproof, it may be installed near park fixtures to encourage park users to dispose of refuse before leaving. One well is used for each set of park fixtures. Where a well cannot be drilled because of rocky soil conditions or high-water table, a 55-gallon barrel, having a stationary lid with a flyproof and odorproof metal door, is another sanitary garbage dispenser that has given more satisfactory service than the unsanitary open barrel and incinerator. Two handles, one on each side, are attached to the barrel. The bottom has a metal door on hinges that can be opened to empty garbage into truck and closed when barrel is set in place. Table and bench tops may be painted with two coats of rubberized concrete paint to prevent staining caused by grease and fruit juices. (Rubberized paint is a product of the Goodyear Rubber Company. It is washable and will not flake.)

To seek cooperation from park users to clean up before leaving, a friendly reminder is stenciled on all table tops. The wording (pictured on page 15 of Bulletin Number 8) is:

WE HOPE THAT THE PREVIOUS USER CLEANED UP BEFORE LEAVING THEREBY MAKING YOUR STOP MORE ENJOYABLE

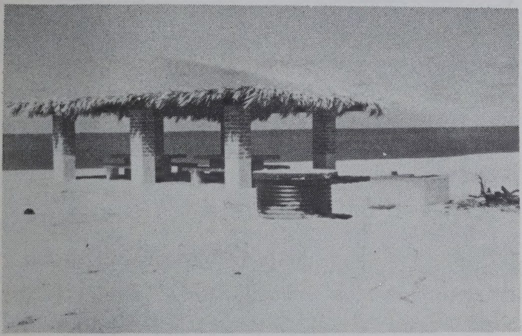
TEXAS HIGHWAY DEPARTMENT

Brush, undesirable trees, and those that interfere with the growth of choice trees are removed. Remaining trees are pruned to remove stubs, dead branches, and low branches that interfere with head clearance of park users, clearance over vehicles and sight distance at park entrances. Grounds, outside of paved areas, are smoothed to final grades and sodded with Bermuda grass. In coastal sections Carpet grass has been used with good results. It is ideal for planting in sunny and shady locations and prevents growth of undesirable weeds and grasses; mowing cost is reduced. Loose, sandy soils are stabilized by incorporating heavy clay soils to provide a firm ground for park users.

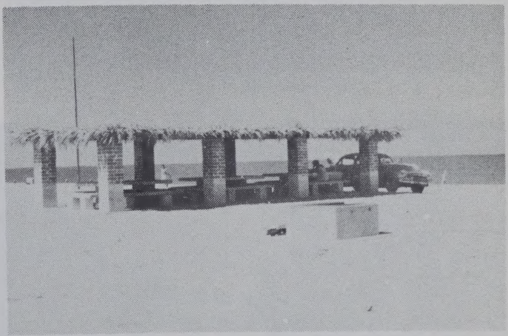
Selection of choice sites at desirable locations, careful planning, good construction, and proper maintenance will provide for an adequate and economical roadside park system that will be much appreciated by the motoring public.

TYPICAL SEASHORE PARK

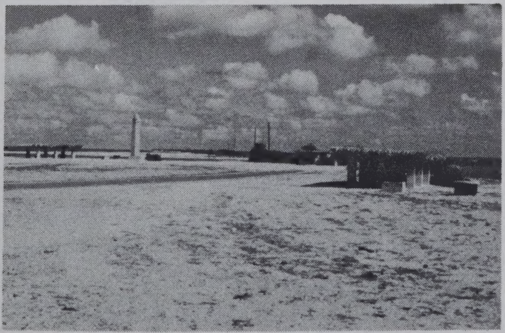
S.H. 316, Calhoun County, 9 miles south of Port Lavaca at Indianola Beach



Two-span arbor ... Roofs of all arbors are thatched with Palmetto leaves. Note sanitary garbage dispenser and fireplace within convenient reach of arbor.



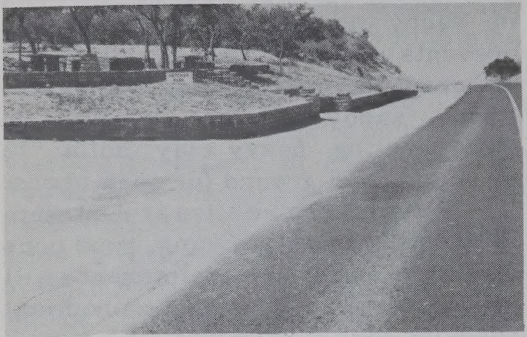
Three-span arbor equipped with three sets of tables and benches, one fireplace, and a garbage dispenser. A large barbeque pit is located on the opposite side of this arbor.



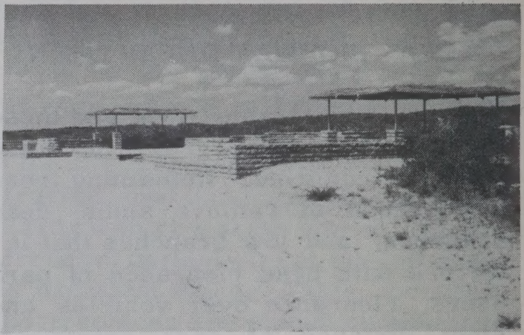
Three two-span arbors have been placed around La Salle Monument. A fourth arbor will be built later. Each arbor has two sets of tables and benches, one fireplace, and a garbage dispenser.

TYPICAL LARGE ROADSIDE PARK

S.H. 9, Live Oak County, 12.3 miles northwest of Mathis
Size: 3.11 acres

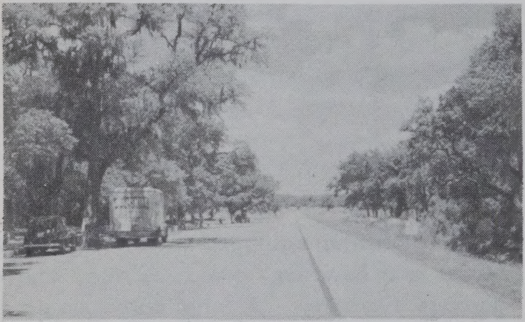


The lower terrace of this park serves transient travelers. Asphalt-surfaced parking strip in front of terrace provides convenient parking space for trucks. Parking space and turn-around area in rear of terrace is for use of automobiles.

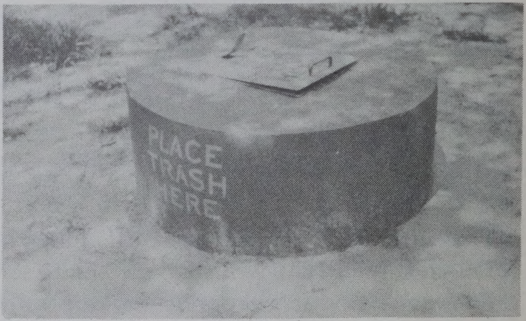


Upper terrace serves large groups from nearby communities. It is located on the summit of a hillside commanding a panoramic vista. A spacious asphalt-surfaced parking area in front of terrace is connected with highway by a 20-foot wide asphalt road.

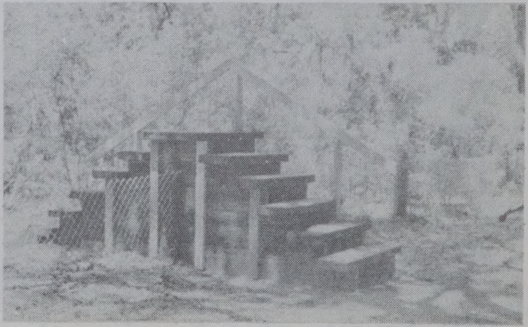
U.S. 77, Lavaca County, 6.8 miles south of Schulenburg
Size: 1.81 acres



Large, surfaced parking area accommodates numerous cars when large groups visit park, and allows convenient and safe parking for large trucks which frequently stop.



A garbage disposal well which is 24 feet deep and extends 2 feet above the ground. The upper portion of the well is encased with concrete.



A wooden step over park fence is provided for park users who seek a "secluded rest spot" among the dense vegetation outside park area. Permission from property owner was secured to install step.

TYPICAL SMALL ROADSIDE PARK

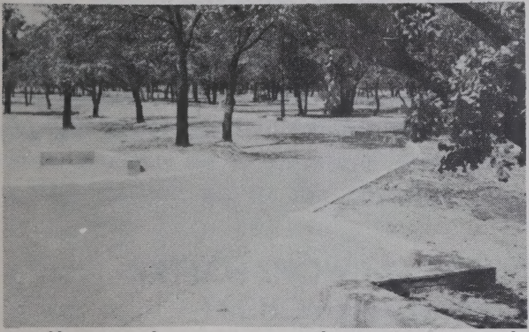
U.S. 90, Colorado County, 5 miles east of Columbus

Size: 1 acre

Broad entrance at each end of park, emphasized by low masonry walls, makes for easy ingress and egress. A large island with sodded slopes separates park from highway.

U.S. 81, Medina County, 3 miles southwest of Devine

Size: Reduced from 4 acres to 1.25 acres



Walls at each entrance and connecting curb are built from concrete tile blocks. Park road with parking strip is located behind a tree-covered island that separates park from highway.

Typical set of table and benches – fireplace and garbage disposal well are conveniently located under shade of trees.

U.S. 59, Goliad County, 4.2 miles northwest of Berçlair

Size: Reduced from 1.38 acres to .83 acre

Parking is restricted by low dome-shaped guard posts on six feet centers. Park road is surfaced with asphalt. Grounds are sodded with Bermuda grass.

One of two sets of park fixtures consisting of tables and benches, garbage disposal well, and fireplace conveniently located under shade of trees.

TYPICAL SMALL ROADSIDE PARK

U.S. 59, Victoria County, 9.5 miles west of Victoria
Size: .52 acre

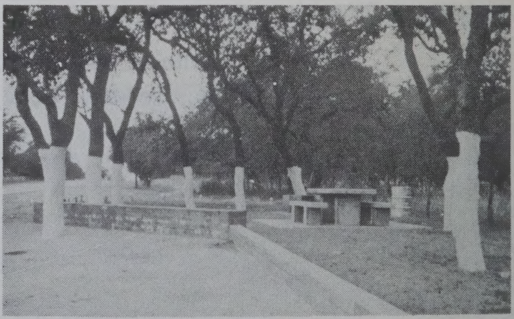
Large, shady parking area in front of park is surfaced with asphalt. This convenient stopping place is frequently used by truck drivers and transient travelers. Masonry wall borders parking area and serves to restrict parking of vehicles.

Weary travelers often stop to seek rest and relaxation from strenuous driving under the dense shade of trees. Low masonry walls designate park road. Dome-shaped guard posts restrict parking within view of highway.

TYPICAL ROADSIDE TURNOUT

U.S. 181, Wilson County, 8 miles northwest of Floresville
Width of right-of-way, 120 feet.

The spacious parking area and approaches are surfaced with asphalt. A wall at each end, connecting curb, and guard posts restrict parking of vehicles.



Walls and curb are built from concrete tile blocks.

TACHOMETER LIFTING ATTACHMENT

PALMER MASSEY, *District Engineer*

The principle of operation of the tachometer lifting attachment used on our asphalt distributor is simple, foolproof, and we have found it entirely satisfactory.

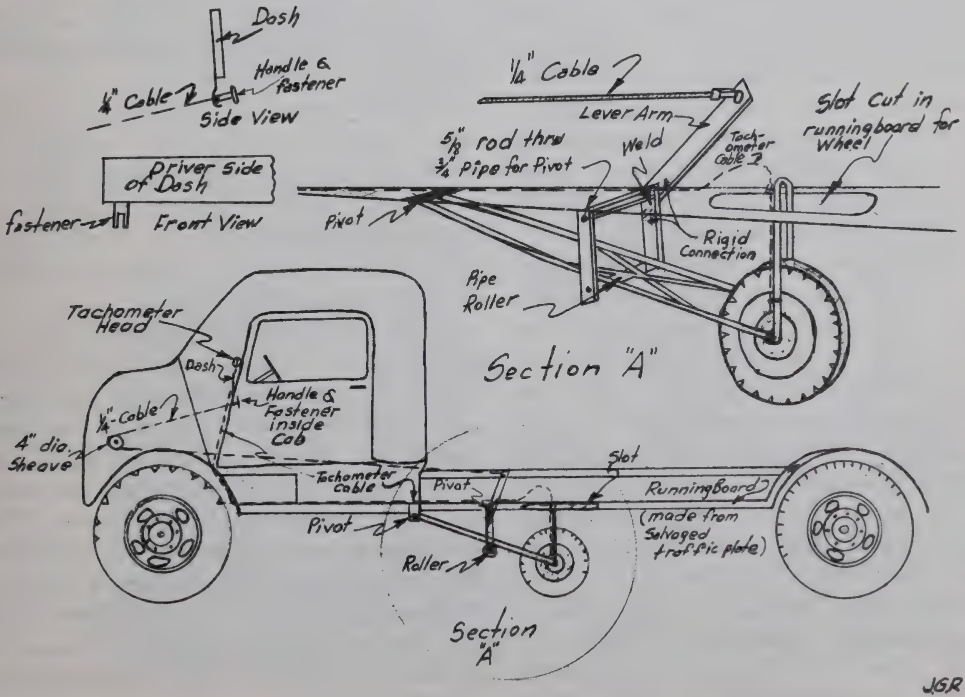
Starting with nothing more than ideas and imagination, Mr. J. R. Long, Equipment Supervisor for District 25, is to be commended for developing this worthwhile attachment. He also supervised its construction. The actual work involved is not too difficult, and the total cost was less than $40.

The primary purpose in developing this lifting device was for the safety of the workmen. It saves the driver two trips in and out of the cab for each asphalt shot made. The handle on the dash serves as a constant reminder to the driver as to the position the wheel is in. Should it be in the wrong position the change can be made by the driver readily without stopping the truck or getting out of the cab seat.

Our new distributor and truck were purchased about the first of the year and this attachment was installed last February while they were still new. The tachometer used is the one that came with the machine. The one-fourth inch pull cable is new and the rest of the device was made from scrap metal. The wheel falls by its own weight when the catch is released on the dash. Therefore as long as the pivots are kept free to turn there is nothing to keep it from operating.

The sketch gives the mechanics of the method of operation.

SKETCH SHOWING LIFTING DEVICE FOR DISTRIBUTOR TACHOMETER WHEEL AS USED IN DISTRICT 25



BE SURE IT'S SCRAP

G. L. WILEY, *Welding Specialist*

Maintenance shops using arc and acetylene welding and cutting are somewhat confused in the present campaign to provide adequate scrap for steel production. Those who are using welding intelligently have already learned how to make good use of what others term "scrap." For them it's not scrap at all but good usable material. This includes small pieces of plate, bar stock, pipe and tubing for which you know you will find a use, and it also includes much broken machinery. If you have made intelligent use of maintenance welding over the years, you know what can be done in the repair and reclamation of worn machinery and equipment.

Just because a machine has broken down from old age or hard usage doesn't necessarily mean that it is junk. Often it can be repaired by a mere welding job to render equal or better service than it gave in its youth. We must not forget about the enormous savings and extended service that can also be obtained from hard facing grader blades, bits, rolls, and tractor treads before it is too late.

So before you "scrap" it, remember a much larger amount of vital cast-iron or steel will have to be utilized to make a replacement -- providing you can secure a replacement at this time. There is absolutely no point in such "scrapping."

Scrap it, if it's scrap! But if it is a part, machine, or any unit in your maintenance shop that will have to be replaced, then repair it by welding. The whole idea of scrap collection is to obtain material for additional steel, not to create a new demand for steel to use in making replacements for articles "junked" in a fervid but misguided act of patriotism.

When welding will reclaim a needed item, don't scrap it. Its scrap value will be extremely small compared with the loss that our production effort will suffer through diversion of new materials to replace the scrapped machine or old bridge steel.

So don't wait for hard-to-get items -- weld them! Welding is the most important tool you have in your shop.

It follows that after you have separated all usable scrap in your junk pile, you should sell the balance. We are told by the National Production Authority that the scrap shortage constitutes the nation's top production problem. If sufficient scrap is not collected, steel production goals will have to be revised downward.

DISTRICT 8

Reclaiming transmission case.

DISTRICT 8

Hardfacing teeth on shovel bucket.

DISTRICT 14

Straightening uprights on pile driving attachment.

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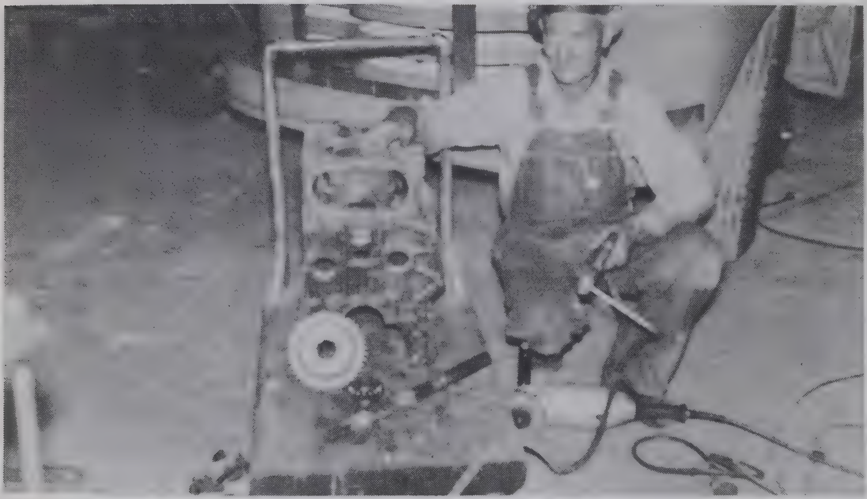
Reclaimed cylinder head.



D
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9

Diesel engine head reclaimed.

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Transmission case repaired.

GRASS FIRE PREVENTION

Maintenance Division

It is again the season of the year when we must take precautionary measures against fires spreading from the rights of way.

The decrease in the number of complaints reaching this office for the past season is indicative of your aggressive action. As a result, our public relations with the farmers and ranchers have been improved.

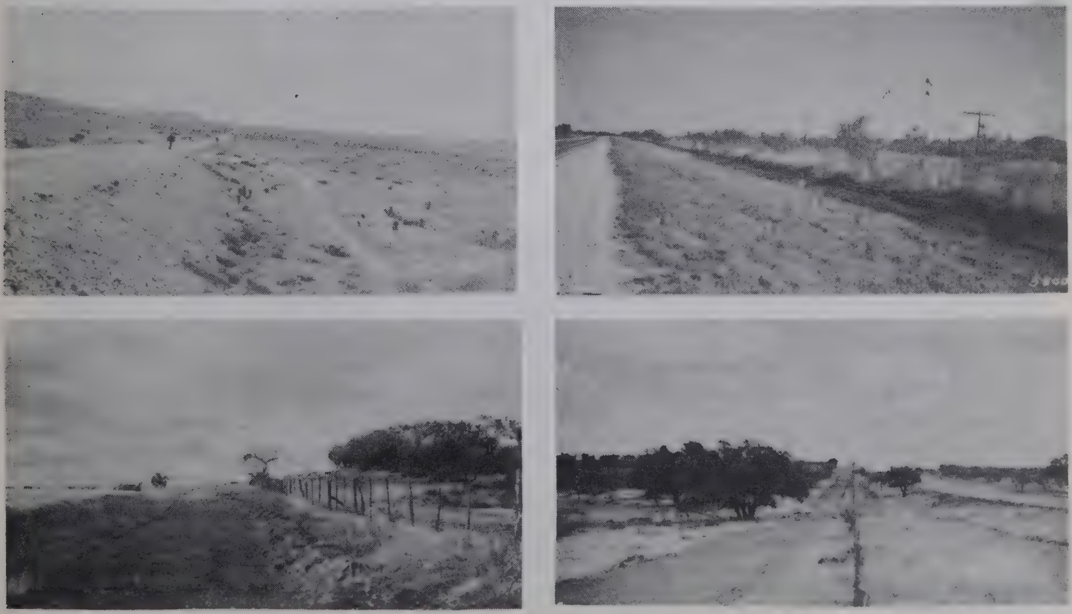
The general policy on grass fire prevention, similar to that contained in circular letters, is presented to refresh your memory on the subject. It is as follows:

1. A fire guard should be bladed on the right of way as near the fence as possible when a fire hazard exists and conditions within the right of way permit, without excessive damage to the roadway.
2. A fire guard may be cut on adjacent property upon request of the owner, provided the lane is cleared of obstructions and suitable provisions are made for crossing fences.
3. When other means of protection are not adequate or feasible, upon request of the property owner, the Highway Department will assist in burning the right of way. Burning should be performed only when the wind is in a direction which will blow the smoke away from the highway; and full consideration should be given to minimize the destruction of wild flowers and erosion control vegetation.
4. Raking of rank grass cuttings and frequent mowing is recommended when the grass fire hazard justifies.

These policies are for general guidance with the full understanding that each district will adopt rules suitable to local conditions in providing adequate protection against grass fires.

Your past cooperation and continued effort in this matter is sincerely appreciated.

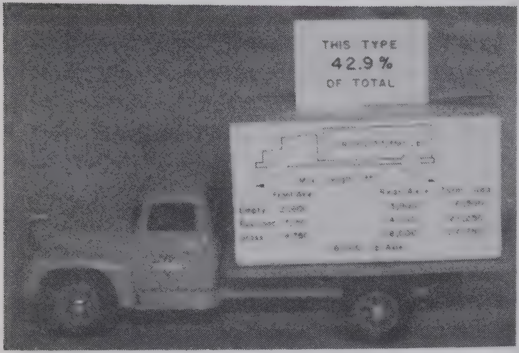
SOME TYPICAL FIRE GUARDS

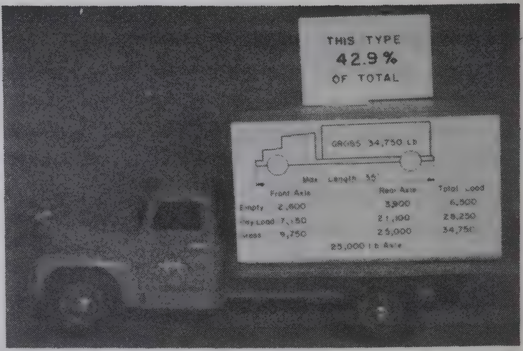


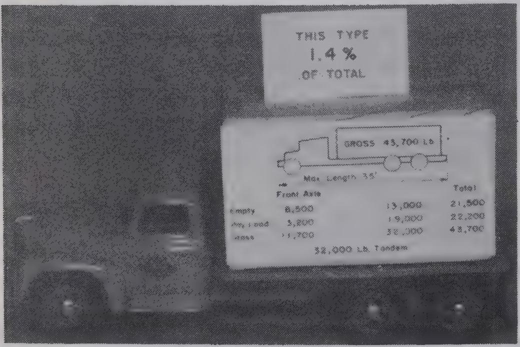
Illustrative Truck Models . . .

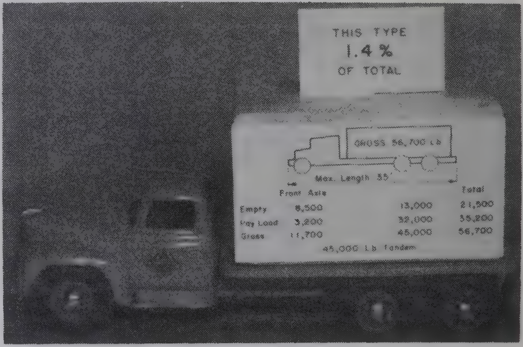
The Highway Commission met in Austin with several major truck operators on September 17, 1951. The purpose of the meeting was to reach a better understanding of legal loads. The truck models pictured below were used.

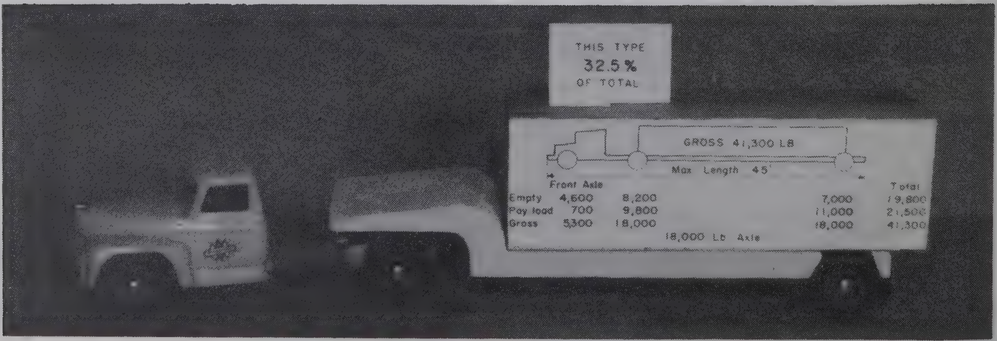
Trucks 1 through 5 show maximum loading for legal axle loads of 18, 000 pounds for single axle and 32, 000 pounds for tandem. Trucks A through E show loading for maximum of 25, 000 pounds single axle and 45, 000 pounds tandem.

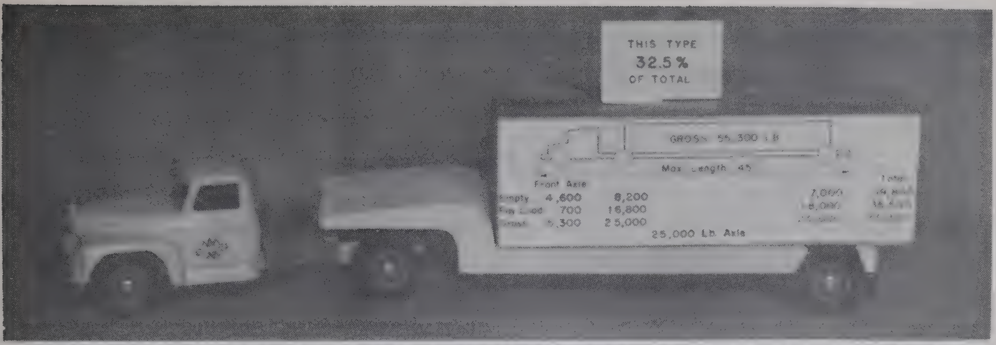


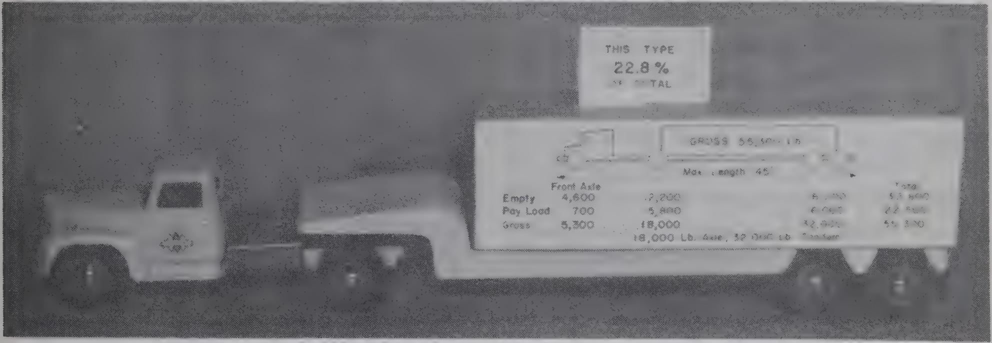


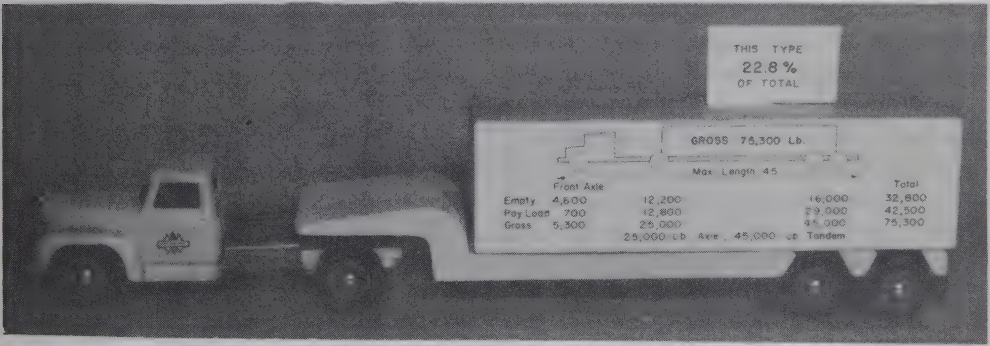


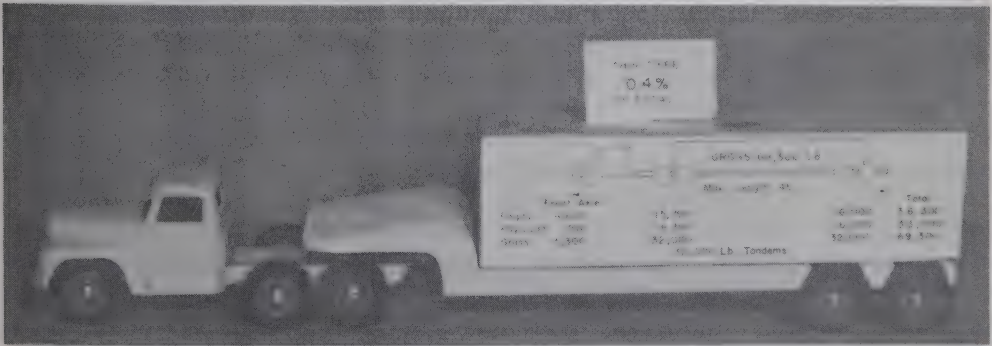


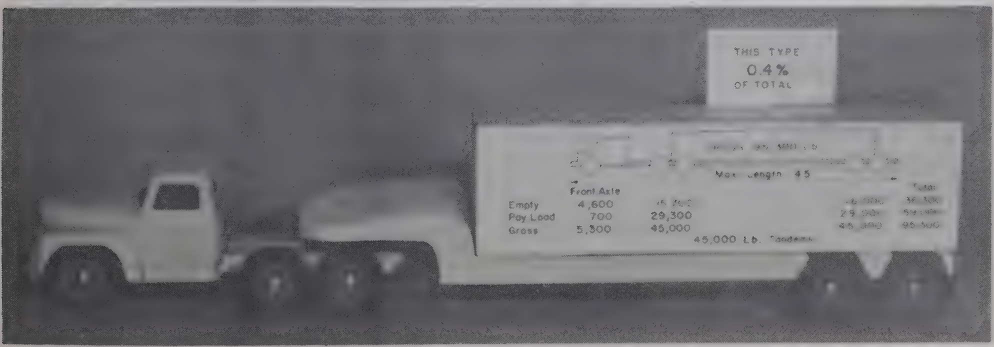

THIS TYPE
32.5 %
OF TOTAL
GROSS 41,300 LB
Max Length 45'
Front Axle
Total
Empty 4,600 8,200 7,000 19,800
Pay load 700 9,800 11,000 21,500
Gross 5300 18,000 18,000 41,300
18,000 Lb Axle


THIS TYPE
32.5 %
OF TOTAL
Max Length 45
Front Axle
Empty 4,600 8,200 7,000
Pay Load 700 16,800
5,300 25,000
25,000 Lb. Axle


THIS TYPE
22.8 %
GROSS
Max Length 45
Front Axle
Empty 4,600
Pay Load 700 5,800
Gross 5,300 18,000
18,000 Lb. Axle


THIS TYPE
22.8 %
OF TOTAL
GROSS 75,300 Lb.
Max Length 45
Front Axle
Total
Empty 4,600 12,200 16,000 32,800
Pay Load 700 12,800 29,000 42,500
Gross 5,300 25,000 45,000 75,300
25,000 Lb Axle, 45,000 Lb Tandem


0.4 %
Total
Lb. Tandems


THIS TYPE
0.4 %
OF TOTAL
Max Length 45
Front Axle
Empty 4,600
Pay Load 700 29,300
Gross 5,300 45,000
45,000 Lb. Tandems

Proper Equipment for the Job Expands Maintenance Capacity *

P. S. BAILEY, *Maintenance Engineer*
and R. Q. SPENCER JR., *Senior Maintenance Engineer*

The growing highway maintenance load is becoming a major problem for the Texas Highway Department. Added mileage plus increased highway use has rendered our maintenance operations of a few years ago inadequate to keep pace with increasing responsibilities.

The increase in traffic alone has made heavy demands on maintenance. Surveys on primary highways reveal a 79 per cent increase in traffic volume in the past five years, and axle loads of more than 22, 000 pounds are common. Many of our older highways with years of excellent service behind them are now requiring heavy base repairs or complete reconstruction, solely because of the increased weight and volume of traffic.

Many elements of maintenance are heavier as a consequence of increasing demands of the public we serve. Greater attention must be given to mowing our rights of way adjacent to fields and residences. Fire protection is demanded where we border inflammable crops and pastures. More consideration must be given to the convenience of traffic when road repairs affect its flow. All traffic services, including signing, pavement marking, and snow removal, must be of the highest quality we can provide. These services were performed in past years, to be sure; but public demand for their expansion is now accounting for a considerable slice of our highway dollar.

The highway dollar in Texas is too small to provide an adequate reconstruction program, making maintenance shoulder the extra burden of carrying roads on which rejuvenation is long overdue. In 1945 the surface on 2 per cent of our primary highway mileage was more than 20 years old, and on 41 per cent was more than 10 years old. Today, 6 years later, 12 per cent has passed its twentieth year, and more than 56 per cent has gone at least 10 years since construction or reconstruction. Needless to say, the rapid aging of these roads is another factor in the growth of the maintenance load.

The problem we face is made up of more work per mile and more miles of work. The combination of traffic growth, a more demanding public and a backlog of reconstruction needs has increased the maintenance effort required on each mile of highway. Growth of our state highway system by a mileage increase of 50 per cent in the last five years has resulted in proportional expansion of maintenance responsibility. The problem of adjusting maintenance operations to fulfill our expanded responsibilities with a minimum slice of the highway dollar is a prime consideration in the administration of our highway system.

Two principal steps that we have taken have proved very effective in the efficient expansion of our maintenance operations. They are (1) increased mechanization, and

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* Reprinted from "Better Roads" magazine, October, 1951.

(2) performance of heavy maintenance on a project basis. Other improvements in the fields of personnel, materials, and methods have also been vital in our efficient expansion; however, we believe that proper equipment and the project basis afford the key to rapid expansion of operations with a minimum drain on highway funds.

Aggregate loading on FM 394 Seal Coat Project, Zavala County, showing truck-mounted clamshell.

Proper equipment for the job is today's best bargain. Improved durability and capabilities of equipment in the last few years have largely offset increased initial costs, leaving the cost per unit of work at a very reasonable figure. The rising cost and frequent shortage of labor further emphasize the advantage of increased mechanization.

Our crews, equipped with the best trucks, loaders, maintainers, and rollers that we can provide are able to expand their operations to cover heavier work and additional mileage. The old one and one-half ton truck is being replaced by two and one-half ton trucks. Loading equipment of some type is assigned to each maintenance crew, with truck-mounted and track-type draglines in each of our 25 districts for use on heavy work. Maintenance rollers in the three to four ton class with built-in travel wheels are replacing lighter units for use on normal surface repairs. Higher-quality maintainers of the 18, 000 and 21, 000-pound class are replacing the old 14, 000-pound machines. All work is geared to maximum justifiable use of equipment units.

The emphasis on maximum use of maintenance equipment has already proved to be an indispensable policy in expanding our operations. Manpower requirement has increased very little, necessitating a minimum of changes in the maintenance organization; and our capacity for work is sufficient for all essential normal maintenance operations, with some leeway for improvements. The Texas Highway Department's investment in equipment is five times that of twelve years ago, and we believe that the investment is fully justified.

The other principal step -- performance of heavy maintenance on a project basis -- has likewise made a decided contribution. This year our betterment - program allotment and other funds to be used on projects of a maintenance nature are about equal to the funds set up for normal maintenance operations. Flexibility, improved engineering, and increased work with minimum disruption of normal maintenance are reasons why heavy maintenance operations on a project basis are favored.

Allocation of funds at the state level for maintenance projects provides flexibility necessary to place funds where they are needed most. Part of the money is programmed each year, and the remainder is allotted to projects as the need arises. Careful consideration in the selection of maintenance projects is equalizing the maintenance condition of highways throughout the state.

When a maintenance problem is big enough to justify a project, it is given special engineering study. In preparing plans and project estimates, careful attention is paid to methods and materials to be used; and the work is given engineering supervision. Adequate engineering enables selection of the most economical method and type of design, and assists in securing a high-standard job.

A maintenance roller compacting asphaltic concrete level-up.

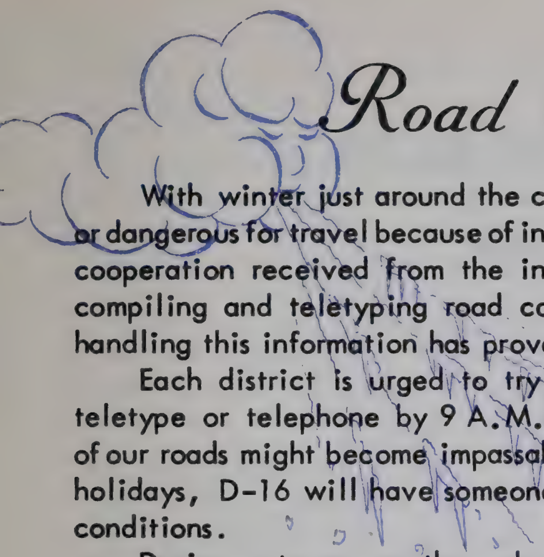
The greatest advantage in setting up projects for heavy maintenance work, in view of our expanded maintenance load, is the greater quantity of work it enables us to perform. Many projects are placed under contract, completely relieving department maintenance forces of the work. We believe that on much of our work a contractor can do the job cheaper than our own forces. On other projects, construction crews in the maintenance organization are used, generally supplemented by leasing equipment with operators for any or all of the hauling, loading, manipulation, or other elements of work for which we do not have men or equipment available. By adjusting the amount of contracting, leasing, and use of our own forces, we are able to handle increases in maintenance projects with minimum disruption of the maintenance organization.

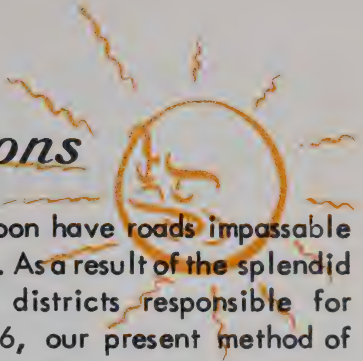
The steps being taken in Texas to grow with the maintenance obligation have been effective in providing efficiency with expansion, but not to the extent that the maintenance bite in the highway dollar is being reduced. With the present fifty cent dollar and heavier maintenance operations, the cost per mile of maintaining Texas state highways has increased only 60 per cent in the last ten years. This means that improved maintenance practices have more than absorbed all the increased work required for each mile of highway; nevertheless, maintenance of the growing mileage on the highway system is still cutting deeper into highway funds. The cure for this situation is more highway funds. Meanwhile the best treatment available is increased efficiency in maintenance operations.

TWENTY-FIVE AND THIRTY YEAR AWARDS . . .

First row: S.W. Thigpen, F.G. Tschiedel, and W.A. Vannoy.
Second row: A.H. McBride, M.L. Malone, H.T. Matthews, A.C. Miles, R.O. Plummer, O.I. Rader, Louie Riehs, and S. A. Shoemaker.
Third row: H.C. Farmer, Vernell T. Gibson, Edmund Goll, O.J. Grizzle, E.A. Hessler, L.H. Hubbert, T. A. Johnson, and Ed Lee.
Fourth row: E.A. Airhart, O.W. Albers, L.A. Beasley, Roy Benson, W.D. Brown, A.F. Cloud, and E.W. Couch.
Fifth row: W.D. Dockery, S.D. Johnson, Geo. J. Kempen, Jr., E.E. Pittman, D. Harry Randolph, Felder G. Rankin, and Henry G. Trotter. Not pictured are Horace Beaty, G.M. Chancellor, Mrs. May Hornsby, T.E. McMillien, and H.H. Soliz.

Road Conditions





With winter just around the corner, we will soon have roads impassable or dangerous for travel because of inclement weather. As a result of the splendid cooperation received from the individuals in the districts responsible for compiling and teletyping road conditions to D-16, our present method of handling this information has proved satisfactory and effective.

Each district is urged to try and get any road information to D-16 by teletype or telephone by 9 A.M. if possible. If it is anticipated that some of our roads might become impassable or dangerous for travel on Saturdays or holidays, D-16 will have someone in the Austin office to handle these road conditions.

During extreme weather when there are many reports to receive and compile, it takes approximately one to two hours to prepare this information and send it out on a state-wide basis. This is the reason that we would like to have the reports in from the districts by or before 9 A.M. so that the state-wide road condition report could be sent back to each district at the earliest possible moment.

Occasionally reports on road conditions have been received that were incomplete, which necessitated an extra teletype in order to obtain the desired information. Listed below are four basic questions which should be answered in your road condition report to D-16.

1. WHAT condition closed the road?
   High water, ice, snow, construction, maintenance, bridge destroyed, etc.
2. WHERE is it closed?
   Give distance and direction from nearest town or junction. List approximate distance and direction from any junctions that might be used as detours.
3. WHEN is it expected to be opened?
   Give opinion or prediction. If road is closed or dangerous as a result of inclement weather, give general weather forecast, that is, are conditions expected to get better or worse in the next 24 hours.
4. IS there any detour available?
   Name any detours which traffic might be routed over. If none are available, please state.

If roads are open but slick and dangerous because of rain, snow, or ice, the specific conditions should be reported along with the sections which are the most dangerous.

BILINGUAL STOP SIGNS

Traffic Services Division

The Problem

The study of Driver Observance of Bilingual Stop Signs in District 21 developed from a study of the high accident rate on U. S. 83 in the Rio Grande Valley. The study of the traffic problem on U. S. 83 revealed that the high accident rate was the result not only of high traffic volumes and the urban-like development of the area but of the poor driving techniques of many motorists as well. Since the driving ability of various nationalities has been questioned from time to time, it was decided to investigate the accident record experience of the several nationalities using U. S. 83. The various nationalities were divided into two groups, drivers of Latin-American descent, and other drivers. This investigation indicated that equal numbers of drivers of Latin-American descent and other drivers are involved in fatal accidents. However, a five per cent sample of vehicle registration in one county in the Valley showed that Latin-American drivers own half the number of passenger cars that all the other nationalities own or one-third the total number of cars. For this reason the potential accident rate for drivers of Latin-American descent is over twice as high as for the total of the drivers of other nationalities.

This study led to the installation of Spanish and English bilingual stop signs at 35 locations in the Rio Grande Valley on an experimental basis. The stop signs were erected on the cross street approaches to U.S. 83, U.S. 281, U.S. 77, S.H. 107, S.H. 336, F.M. 495, and one county road.

Method of Study

"Before and after" studies of driver observance of bilingual stop signs were made at these intersections in order to ascertain their effect on drivers of Latin-American descent as compared to the total of other drivers. The "before" studies of the stop sign observance were made on the regular stop signs on April 29 and May 8, 9, 10, and 11, 1950. The regular stop signs were then replaced with bilingual stop signs on August 15 and 21, 1950. The "after" studies of the stop sign observance were made on the bilingual stop signs on November 7, 8, 13, and 14, 1950.

An analysis of 34 of the stop sign locations was made. Seventeen of the locations were on the approaches to federal highways while the remaining 17 locations were on the approaches to state highways, farm to market roads, and the county road.

Analysis of the Data

Numerical and graphical summaries of the analysis are attached which show the percentage of drivers who came to a full stop, those who entered the intersection from zero to three m.p.h., those who entered from four to 15 m.p.h., and those who entered the intersection at over 15 m. p. h. The summary indicates that drivers of Latin-American descent have a better record for the observance of stop signs, both regular and bilingual, than do the drivers of all the other nationalities. At regular stop signs at both federal and state routes, 43. 9 per cent of Latin-American drivers came to a full stop as compared to 39.6 per cent of the other drivers. At the bilingual stop signs, 57.6 per cent of the Latin-American drivers came to a full stop as compared to 53.4 per cent of the other drivers. At regular stop signs at federal routes, 48.5 per cent of the total drivers came to a full stop as compared to 33.6 per cent of the total drivers who came to a full stop at state and county roads. At the bilingual stop signs at federal routes, 64.1 per cent of the total drivers came to a full stop as compared to 46.3 per cent of the total drivers who came to a full stop at state and county roads.

Fifty-three and nine-tenths per cent of the Latin-American drivers came to a full stop at the regular stop signs at federal routes as compared to 68.8 per cent who came to a full stop at the bilingual signs. Thirty-five and five-tenths per cent of the Latin-American drivers came to a full stop at the regular stop signs at state and county roads as compared to 46.8 per cent who came to a full stop at the bilingual stop signs. Forty-six and seven-tenths per cent of the other drivers came to a full stop at the regular stop signs at federal routes as compared to 62.3 per cent who came to a full stop at the bilingual stop signs. Thirty-two and seven-tenths per cent of the other drivers came to a full stop at the regular stop signs at state and county roads as compared to 46.1 per cent who came to a full stop at the bilingual stop signs.

A summary of the influence of bilingual stop signs is found in the following comparison. At the regular stop signs at both federal and state routes, 40.7 per cent of the total drivers came to a full stop while 54.5 per cent of the total drivers came to a full stop at the bilingual stop signs.

Conclusions

First it should be noted that Latin-American drivers have a better record for stop sign observance at both the regular and bilingual stop signs than do the other drivers. Further, the analysis of the data has shown that the bilingual stop signs increase the percentage of drivers who come to a full stop as compared to those who come to a full stop at the regular stop signs. This holds true for both Latin-American drivers and other drivers. The bilingual stop signs appear to have as much effect on other drivers as on the Latin-American drivers. The increased percentage of drivers who come to a full stop with the use of bilingual signs varies from 11.3 to 15.6 per cent.

It would appear, therefore, that the use of bilingual stop signs is warranted in areas where there is a large population of drivers of Latin-American descent and where the present observance of the stop signs is poor.

It should be stated that a larger sample of drivers at each intersection would probably change the percentage of drivers who come to a full stop and those who come to a partial stop. However, the value of the bilingual signs would still be apparent although in a varying degree.

The flashing beacons were in operation for over a year before the bilingual studies were made so that conditions remained the same during the study.

DRIVER OBSERVANCE OF STOP SIGNS

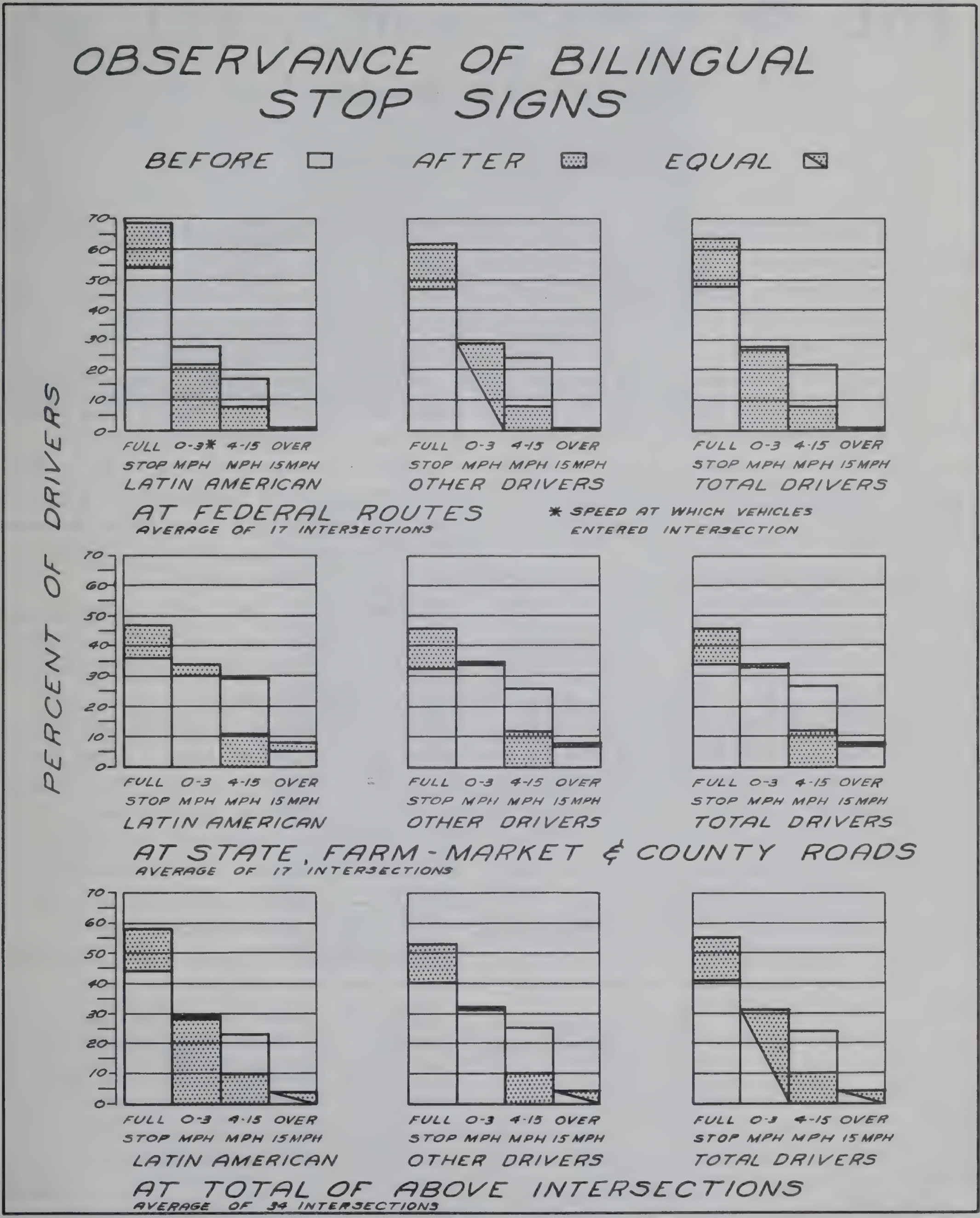
GRAND SUMMARY SHEET

OF BILINGUAL SIGNS

Date April-Nov., 1950 Observations from .... to .... City Rio Grande Valley

INTERSECTION	Made a full STOP						Practically Stopped		Entered Slow		Entered Fast		TOTAL	
	Voluntary		Stopped by Traffic		Total		0-3 M.P.H.		4-15 M.P.H.		over 15 M.P.H.			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Before Latin Dr. Fed. Hwy. Ave.	73	33.3	45	20.6	118	53.9	61	27.8	37	16.9	3	1.4	219	100
After Latin Dr. Fed. Hwy. Ave.	247	44.6	134	24.2	381	68.8	124	22.4	47	8.5	2	0.3	554	100
Before Other Dr. Fed. Hwy. Ave.	186	28.6	118	18.1	304	46.7	186	28.6	152	23.5	8	1.2	650	100
After Other Dr. Fed. Hwy. Ave.	663	47.3	211	15.0	874	62.3	405	28.9	117	8.3	7	0.5	1403	100
Before Total Dr. Fed. Hwy. Ave.	260	29.8	163	18.7	423	48.5	248	28.4	191	21.9	11	1.2	873	100
After Total Dr. Fed. Hwy. Ave.	910	46.5	345	17.6	1255	64.1	529	27.0	164	8.4	9	0.5	1957	100
Before Latin Dr. State Hwy. Ave.	61	23.6	31	11.9	92	35.5	78	30.1	75	29.0	14	5.4	259	100
After Latin Dr. State Hwy. Ave.	140	24.7	125	22.1	265	46.8	195	34.4	63	11.1	44	7.7	567	100
Before Other Dr. State Hwy. Ave.	114	16.8	108	15.9	222	32.7	228	33.6	178	26.3	50	7.4	678	100
After Other Dr. State Hwy. Ave.	504	29.9	274	16.2	778	46.1	585	34.6	196	11.6	130	7.7	1689	100
Before Total Dr. State Hwy. Ave.	175	18.7	139	14.9	314	33.6	306	32.7	252	26.9	64	6.8	936	100
After Total Dr. State Hwy. Ave.	644	28.6	399	17.7	1043	46.3	780	34.5	259	11.5	174	7.7	2256	100
Before Latin Dr. Total Hwy. Ave.	134	28.0	76	15.9	210	43.9	139	29.1	112	23.4	17	3.6	478	100
After Latin Dr. Total Hwy. Ave.	387	34.5	259	23.1	646	57.6	319	28.5	110	9.8	46	4.1	1121	100
Before Other Dr. Total Hwy. Ave.	301	22.6	225	17.0	526	39.6	414	31.2	330	24.8	58	4.4	1328	100
After Other Dr. Total Hwy. Ave.	1167	37.7	485	15.7	1652	53.4	990	32.0	313	10.2	137	4.4	3092	100
Before Total Dr. Total Hwy. Ave.	435	24.0	302	16.7	737	40.7	553	30.6	442	24.4	78	4.3	1810	100
After Total Dr. Total Hwy. Ave.	1554	36.8	744	17.7	2298	54.5	1309	31.0	423	10.1	183	4.4	4213	100
TOTAL														

Date.. Recorder..



OBSERVANCE OF BILINGUAL STOP SIGNS

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THE MOTORIST'S BEST FRIEND

By Richard M. Morehead

Reprinted from the October, 1951,
issue of "Texas Parade" magazine.

The Highway Maintenance Man, think some silly citizens, spends his working hours setting up obstacles along the route of travelers Who-Had-to-Be-There-Yesterday.

This type of driver frets at every five minute delay, and mutters when the flagman orders a slowdown from seventy-five to twenty-five, while workers renew the pavement.

The fact is, Mr. M. is the motorist's best friend.

Without his services, come hail, freeze and high water, the traveling public would soon be searching for a decent road to ride on, rather than taking such things for granted.

It hasn't been many years since the motorist who drove from Waco to Dallas without a breakdown boasted to his friends about it. Now he's inclined to write the Governor if "Men at Work" trim five minutes off his mile-a-minute running time.

Not everybody, of course, resents highway maintenance.

Many drivers, particularly the old-timers, recall "detours" over bumpy, dusty, or muddy lanes as regular incidents on every trip.

The Texas Highway Department has about eliminated detours, and has developed maintenance to a point where inconvenience is slight.

If the flagman stops you on a job where one-way traffic is needed during repairs, you get a polite note saying the Department regrets the delay but is doing its best to maintain first-class highways, without detours.

If a careless driver ignores the caution signs on a maintenance section, the car owner likely will get a letter -- also polite -- explaining that thirteen workers have been killed and 181 injured since V-J Day by motorists.

Five highway employees died this summer as heedless drivers hit the barricades. Accidents increased so alarmingly that protective steps, such as detours or putting traffic in the ditches may become necessary.

Many persons who receive the warning letters write the Highway Department, apologizing for their mistake and expressing appreciation for having the danger explained.

"Ninety-nine per cent of the public is cooperative," says Percy S. Bailey, who heads the Highway Department's maintenance division.

Six to seven thousand people keep up 38, 340 miles of road, directed by foremen working under the district engineers. Many maintenance men are veterans. Several hold 30-year service records. The public generally pays little attention to them, except when traffic slows down.

But many motorists know these men as messengers of mercy.

Take the hundreds who have been stranded in snowdrifts on the West Texas plains. South Texans may not realize it, but the Highway Department operates dozens of snowplows.

It is the maintenance man who mushes by snowplow to the rescue. More than once state police cars have been found trapped by snow during blizzards.

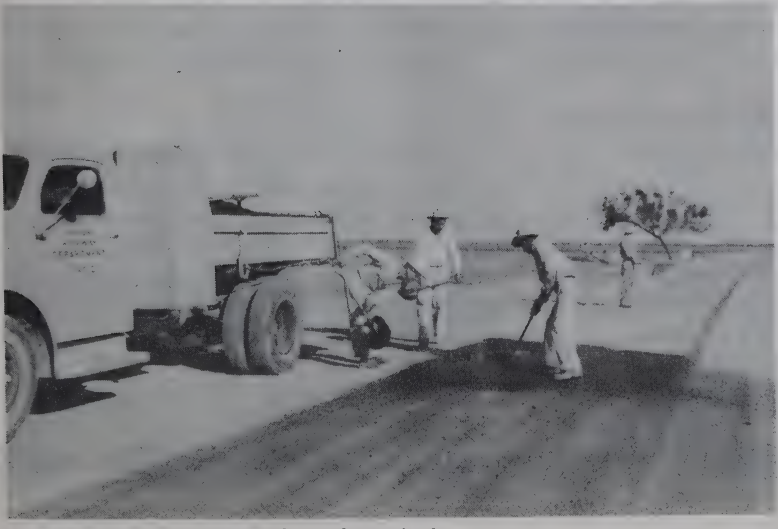
Ice and snow are the worst hazards. Freezing water bursts the paving and does great damage, which must be repaired.

During ice storms, the highway workers sand the hillsides and bridges, but even this help doesn't make traveling safe.

Nevertheless, the traveler. almost

Applying tack coat for a surface treatment project.

Patching surface behind temporary barricade.



Leveling up surface with rock asphalt.

never finds an important Texas highway closed by weather for more than a few hours. The snowplows and the maintenance folks see to that. Once in a while, a washed-out bridge may cause traffic to be diverted.

Maintenance men see much that escapes the motorist who buzzes along at sixty.

Roland Smith and Bill Yarbrough were cutting weeds last spring on the right of way near Kerrville. A turkey hen flew up. They looked into the tall grass and found a dozen eggs.

So Smith and Yarbrough mowed around the nest, leaving a twenty-foot grass thicket to protect the turkey. Later, a game warden reported all twelve eggs had hatched and the mother and young birds moved on.

Howard Dodgen, executive secretary for the Game, Fish and Oyster Commission, commended the highway workers publicly. It was an example, said Dodgen, of alertness often shown by highway department men in preserving game.

A few hunters, however, give the highway workers a bad time.

Vandalism costs about $500, 000 a year. Shooting up the highway signs is one form. Each sign costs the taxpayers $9. 50, not counting labor in erecting them nor the bullets wasted in such poor sportsmanship.

The worst evil, of course, is the possibility that some driver may fail to see a warning sign.

Vandals formerly went to great pains to remove reflector buttons that guided motorists at night. This type of chiseling has been reduced by using a reflector material which cannot be transplanted.

Improved materials and mechanization has helped offset the rising cost of road upkeep. The Highway Department uses five times as much machinery now as it did twelve years ago.

"Maintenance" strives to keep roads up to original standards. It includes repairing and improving surfaces, cutting grass along the shoulders, and cleaning up the roadside parks.

It costs $600, 000 a year just for center striping.

A painted stripe must be renewed one to three times every year. An improved stripe made of stone chips will last four or five years. Striping rigs cover about 8, 500 miles a year, almost without slowing down traffic.

Ingenuity is a part answer to highway upkeep, but some problems must be answered by cold, hard cash.

The Department's new maintenance budget is $23, 076, 900, up $3, 400, 000 over last year. The twelve months saw 3,962 new miles added to the system.

Mileage has almost doubled in fifteen years. Volume of traffic increased seventy-nine per cent in the past five years. Twice as many vehicles pound the pavement as did ten years ago. Overloading of trucks has been common, say the maintenance experts.

Texas roads are getting older. And old highways, like people, can't stand the beating they did when young.

Eighteen hundred miles of highway now in use has passed the "retirement" age of twenty years, according to Chairman E. H. Thornton of the Highway Commission. More than half the state's primary system is past the ten-year middle age mark.

"These things pyramid into a serious situation," says D. C. Greer, State Highway Engineer.

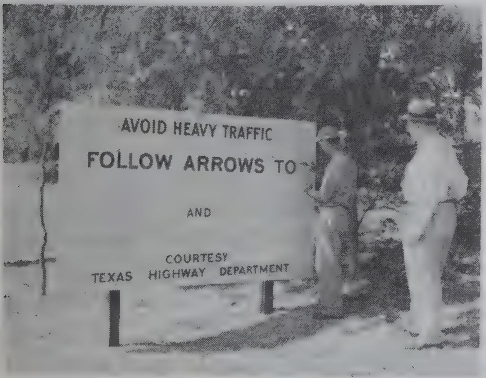
"The secret of the Texas road system's success was established nearly 30 years ago when the Legislature directed the State Highway Department to maintain the highways. That is the lifeblood of our road system."

■ ■ ■

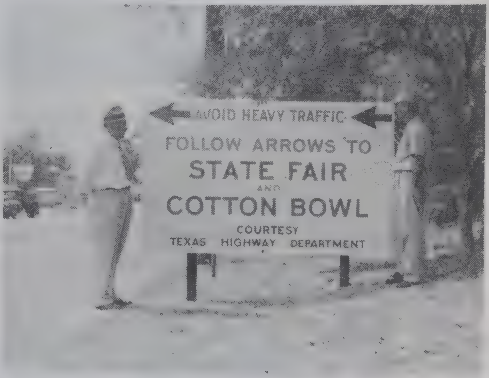
Follow the Arrows ➡ ➡ ➡

To The Fair . . .

A popular slogan used by out-of-towners regarding the 1951 State Fair of Texas was "...follow the arrows to the Fair Grounds." District 18 was responsible for the idea of placing arrows to aid and assist the motoring public in reaching the State Fair over the best and most practical route. In addition to winning many new friends for the Highway Department, we received good publicity throughout the state regarding this gesture. Undoubtedly, the district decided to kill two birds with one stone: assist the motoring fair-goers and promote good will for the organization. They were also probably sympathetic with the fair visitors after having seen so many motorists wandering all over Dallas looking for the Fair Grounds. The shortest and best routes from the principal incoming highways to the Fair Grounds were first selected and were then signed by arrows. On each highway, a large sign was constructed and placed so that incoming motorists were informed of the route which had been marked by arrows to the Fair for their convenience by the Highway Department. Of the 2,320,129 fair-goers this year, it can be estimated that a large part of this 2 1/3 million people followed these arrows and appreciated this extra service rendered them by the Texas Highway Department.



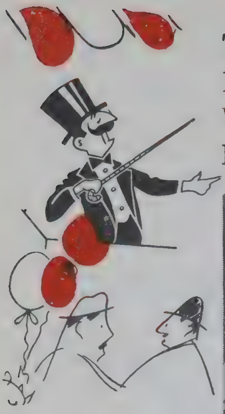
Finishing touches are added by R.E.(Dick) Gilder, Skilled Laborer, while Frank Cawthon, District Engineer, looks on.



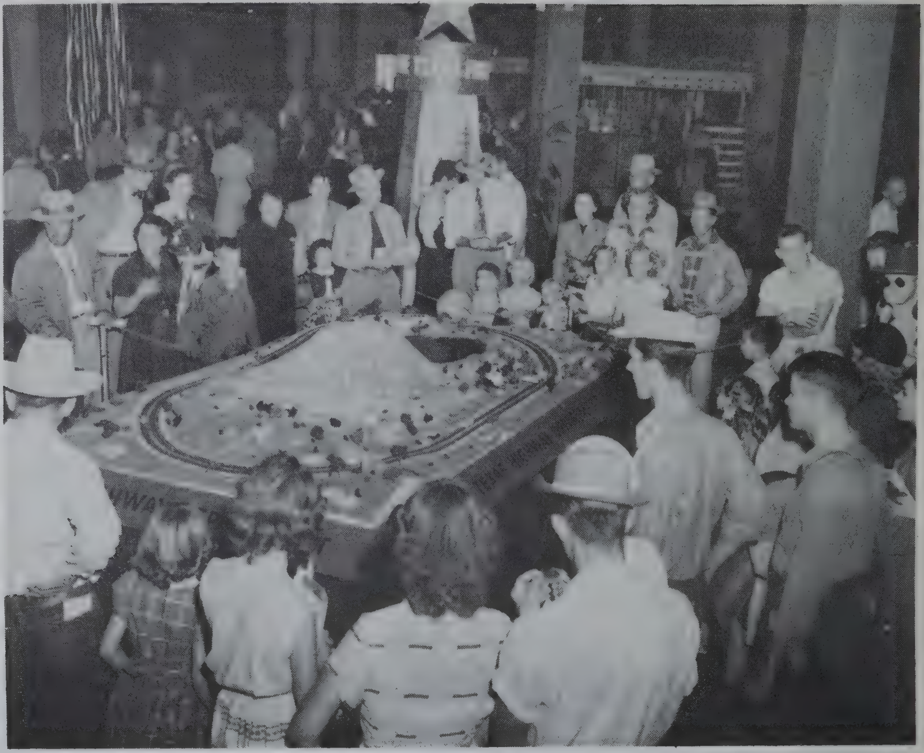
The finished product -- This sign was designed by E.C. Lindsay, Skilled Laborer, of District 18.

Dick Gilder straightens an arrow . . .

Straight ahead to the Fair . . .



The question asked
By both young and old
Was "What in tarnation
Makes those little cars go?"



MODEL HIGHWAY EXHIBIT

One of the most popular exhibits at the State Fair this year was the "Model Highway Exhibit." The visitors had an opportunity to see a scaled miniature highway travel information bureau, roadside park and turnout, state line markers, and other items maintained for the safety and convenience of the public on Texas highways. Actual scaled miniature vehicles, including a highway maintenance truck, traveled both directions without any motor or other attachments, giving the illusion that they were self-propelled in some manner. A miniature lake with water flowing from a spring and a replica of a typical West Texas mountain added authenticity and beauty to the display.

The Highway Department Information Booth at the Fair was staffed with Travel Information Bureau attendants, who also operated the exhibit. Fairgoers welcomed the opportunity to obtain a free highway map and other travel information, along with local information pertaining to the State Fair of Texas. Of the 2 1/3 million people who visited the Fair this year, thousands upon thousands had an opportunity to personally meet the Highway Department through the medium of these exhibits.

State Fair '51

OVER-ALL VIEW

On the left is a "Safety Quiz" machine which offers observers a challenge to test their ability at identifying highway signs by their shape and color. They can select any of the true-false questions and indicate the answer by pressing a button. If the correct answer is given, a musical chime is heard; however, if a wrong answer is indicated, the "raspberries" are given.

On each side of the "Safety Quiz" machine are two large panels in color, designed to discourage vandalism and carelessness to the highways and highway properties. The panels were designed to put across a message to the public that their thoughtlessness is not only costly and dangerous, but destroys or greatly mars the appearance of the highways and special features provided for their convenience.

On the right is a pictorial album of Texas containing eighteen 11" x 14" pictures in full color, depicting some of the numerous scenic attractions in the state. This pictorial album is effective in creating a desire to travel extra miles within the state.

INFORMATION BOOTH

1950 ATTENDANCE 2,176,519

OCTOBER
6-21
1951
World's Largest State Fair

STATE FAIR OF TEXAS
DALLAS 10, TEXAS

R. L. THORNTON
PRESIDENT
JAS. H. STEWART
EXEC. VICE PRES. & GEN. MGR.
FRED F. FLORENCE
TREASURER
S. B. COX
SECRETARY
E. L. FLIPPEN
1ST VICE PRESIDENT
HUGO W. SCHOELLKOPF
2ND VICE PRESIDENT

VICE PRESIDENTS
BEN E. CABELL
JNO. W. CARPENTER
W. H. HITZELBERGER
JORDAN C. OWNBY
JULIUS SCHEPPS
J. GLENN TURNER
T. M. WATSON

October 31, 1951

Mr. D. C. Greer
State Highway Engineer
Texas Highway Department
Austin, Texas

Dear Mr. Greer:

One of the most outstanding operations of the 1951 State Fair was the public service rendered by the Information Division of your department.

All of the personnel involved are to be highly commended, and reflect the outstanding policies of the Texas Highway Commission in its service to the people of Texas and the visitors from over the nation that attended our exposition.

Sincerely,

James H. Stewart

James H. Stewart
Exec. Vice Pres. and Gen'l. Mgr.

JHS
jt

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R. L. THORNTON
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TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Del Rio, Texas
October 15,1951

FILE NO.

MEMORANDUM TO ALL RESIDENT ENGINEERS AND MAINTENANCE FOREMEN

SUBJECT: Operation of State-owned Equipment

Gentlemen:

During the past 18 months we have had only 3 or 4 minor accidents in which State equipment was involved, but on October 10, 1951, a rather serious accident occurred on State Highway 55, about one mile north of Uvalde, in which Mr. - - - was rather seriously injured, losing the sight of one eye, and the almost complete destruction of a truck. It is quite evident that this truck was being operated within the maximum allowable speed as set by law, but in this particular instance this speed was not consistent with the width and condition of the pavement.

In the future, operators of equipment MUST take all the necessary precautionary measures in the operation of our equipment. There are many instances where a speed of 45 m.p.h. is satisfactory if the truck is unloaded, but with a heavy load the speed should be materially reduced. There are other instances where due to the condition and width of the pavement a speed of 45 m.p.h. , either loaded or unloaded, is unsafe and especially when attempting to overtake or pass a vehicle, or when meeting one.

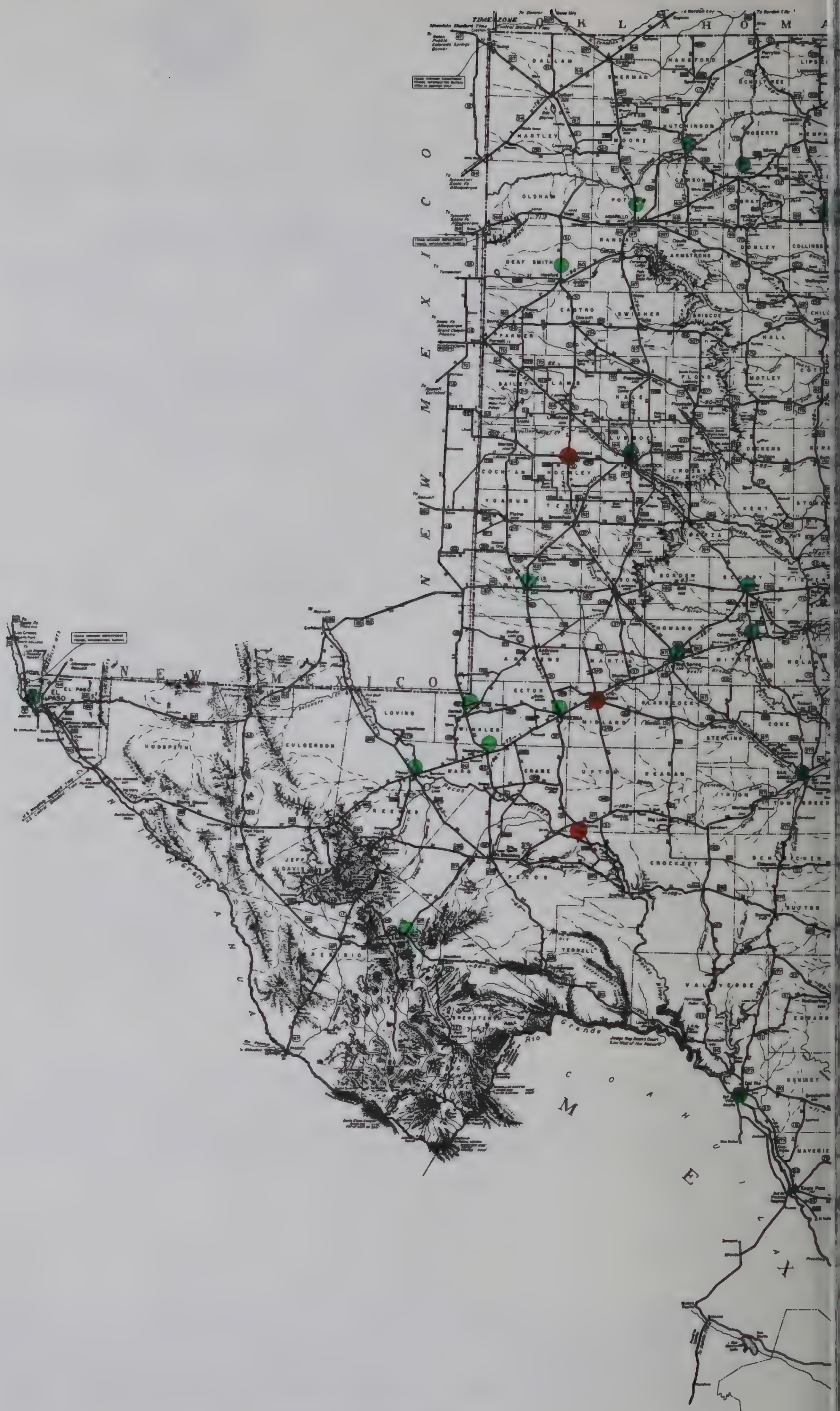
It will be the responsibility of Messrs. Parsons, Lowe, Ford, and the undersigned, to report to you any flagrant violation of this memorandum, and should a violation be reported it will be your responsibility to take rather drastic disciplinary measures with the offending employee.

Sincerely yours,

M B Hodges.

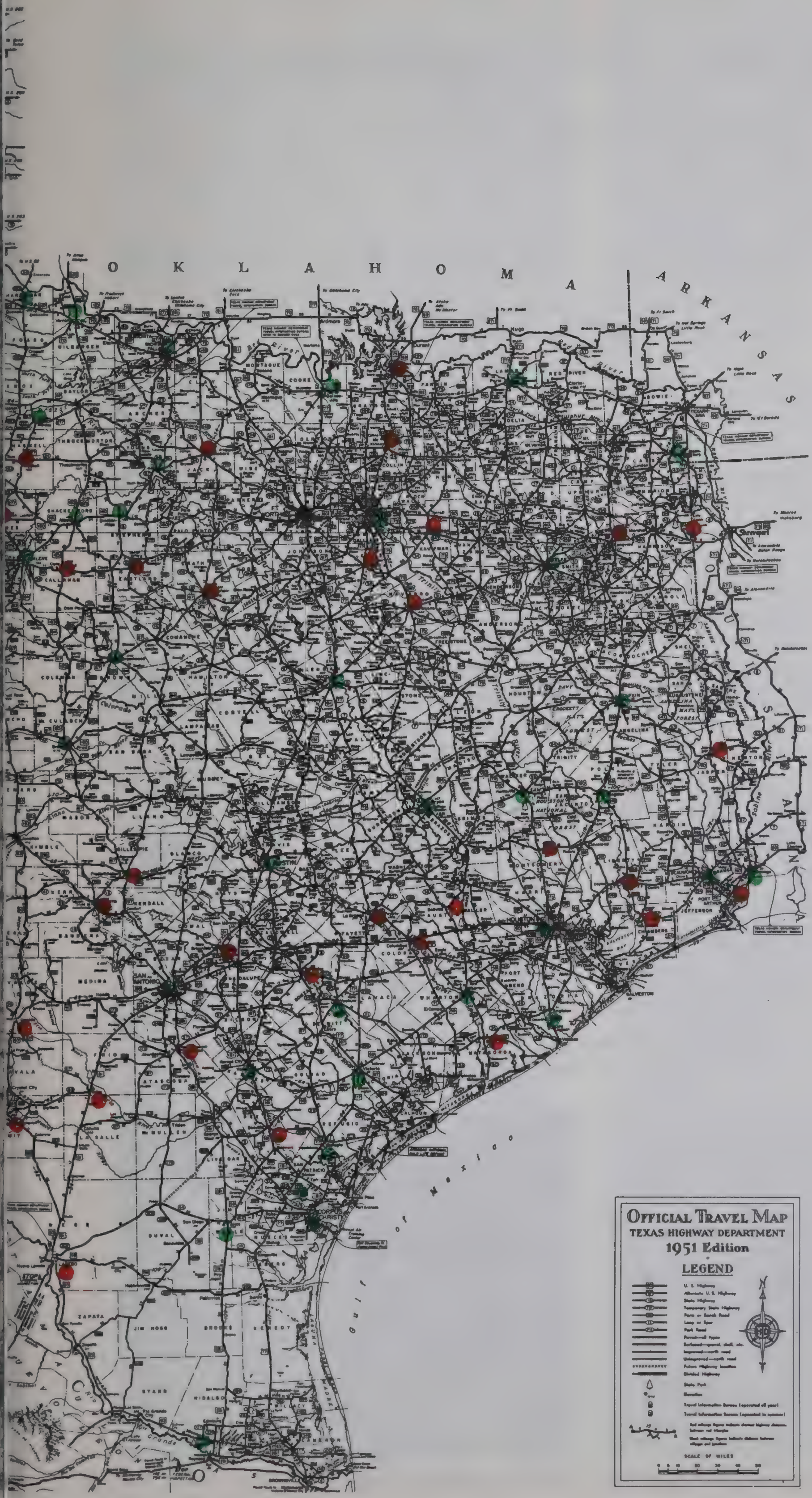
M. B. Hodges
District Engineer

MBH/gh



PERMIT OFFICES

🟢 ESTABLISHED PRIOR TO SEPTEMBER, 1950	55
🔴 ADDED SINCE SEPTEMBER, 1950	35
TOTAL IN STATE	90


OKLAHOMA
ARKANSAS
Gulf of Mexico
OFFICIAL TRAVEL MAP
TEXAS HIGHWAY DEPARTMENT
1951 Edition
LEGEND
U. S. Highway
Alternate U. S. Highway
State Highway
Temporary State Highway
Farm or Ranch Road
Loop or Spur
Park Road
Paved—all types
Surfaced—gravel, shell, etc.
Improved—earth road
Unimproved—earth road
Future Highway location
Divided Highway
State Park
Elevation
Travel Information Bureau (operated all year)
Travel Information Bureau (operated in summer)
Red mileage figures indicate shortest highway distance between red triangles
Black mileage figures indicate distance between villages and junctions
SCALE OF MILES
0 5 10 20 30 40 50
N

1951 SEAL COAT PROJECTS

Construction and Maintenance Divisions

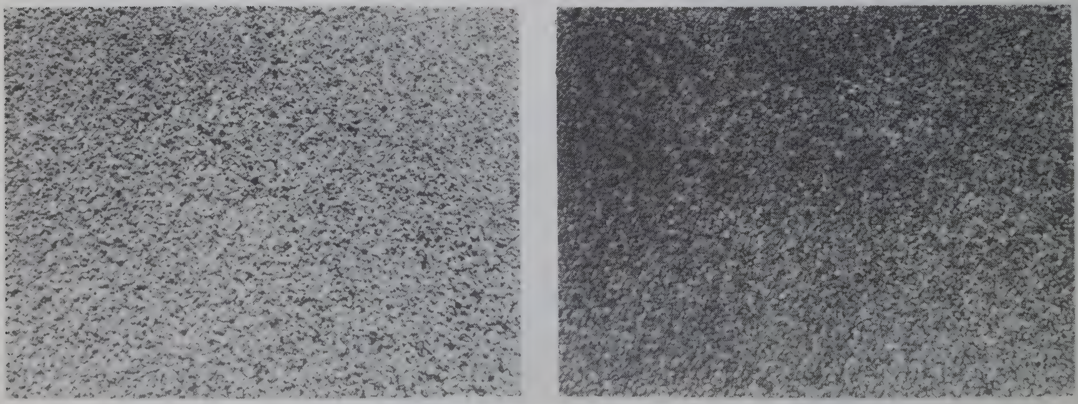
During the 1951 Asphalt Program, representatives of the Construction and the Maintenance Divisions made inspections on 146 projects over the entire state.

The type of construction involved on these 146 projects consists of 62 seal coats; 54 one-course surface treatment; 29 two-course surface treatment; and 1 three-course surface treatment.

On these 146 projects, it was found that warning cards were issued on 123 projects; 62 projects had some excess aggregate, there was bleeding on 19 projects, and 2 projects had streaking. With regard to consideration given the traveling public, 111 projects were reported as being excellent and 26 projects were reported as being fair to poor.

We wish to compliment the districts for the improvement made during the 1951 Asphalt Program toward elimination of the flying stone menace, the progress made toward improving the public relations with the traveling public and the improvement made in the quality of construction.

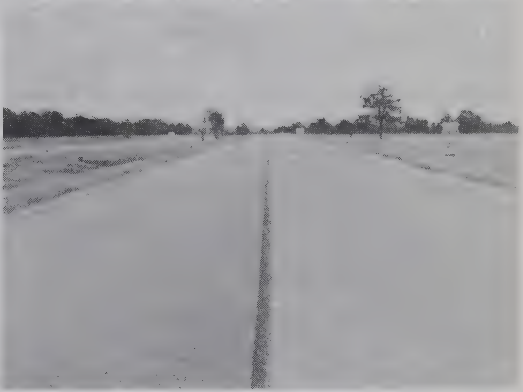
Seal coat being placed on F.M. 92 in Zavala County, using OA 175 at 0.25 gal/SY and Grade 3 L.R.A. at 1:90.



The same job showing texture before and after rolling.

A Double Asphalt Surface Treatment on S.H. 29 northwest of Austin, placed after widening and resectioning. HVRS, EA was applied at 0.2 and 0.25 gal/SY and crushed gravel, Grade 5, used in both courses, was applied at 1:150 and 1:160 respectively. Traffic is 2520 VPD.

Seal coat on U.S. 81 north of Austin. EA, HVRS - 0.2 gal/SY; Grade 5 aggregate - 1:165. Traffic is 5640 VPD.



West of Bastrop a seal coat was placed on half of the surface to eliminate a slick area. Using EA, HVRS - 0.18 gal/SY; crushed gravel, Grade 5 - 1:165. Traffic is 2420 VPD.

On U.S. 75 north of McKinney, this flexed LRA seal coat was placed over concrete pavement to reduce deterioration until reconstruction next year. Crack sealing, non-skid, and level-up has been gained.

Seal coat on S.H. 173 south of Hondo. OA 175-.25 gal/SY; LRA, Grade 3-1:87. Traffic is 400 VPD.

CENTER STRIPING, District 8

HERMAN H. LANDRUM, Chief Inspector

When I started to work for the Texas Highway Department nineteen years ago, my first job was center striping. I liked this work and was proud of my first job, and it has been my sincere desire all through the years to put down the best center stripe in Texas. It is part of my job to assist with the seal coat program during the summer months, but I am always glad to get back to my favorite job of center striping when the asphalt season is over. Some 5,000 miles of center stripe have been placed in District 8 under my supervision, and we have a trained crew of nine men who take as much pride in their work as the supervisor and we always try to do a better job each time, with a minimum cost.

The first center stripe we worked on we used a somewhat different method to our present one. We then used a pushcart-type buggy which was hard to keep on the line, and once in a while it would get away in spite of our best efforts to make a straight line with it. I remember one line that we put down on U.S. 277 in Jones County on a fairly new concrete pavement that looked like we had tried to write MISSISSIPPI and had dotted all the "i's." We would have denied putting this particular stripe down like Peter denied the Lord if we could have gotten away with it. However, we began to study seriously how to eliminate such crooked stripes.

Our lines were then six inches wide and carried a continuous line on concrete pavement, but on asphalt pavement we striped only the hills and curves where it was unsafe for vehicles to pass each other. As time passed and traffic increased, the need for center stripe also increased. The old pushcart was too slow and inefficient so we started thinking about a new type machine. In order to speed the work, we needed a larger machine, self-propelled, which would cover more miles per day. We mounted the machine on a truck, put a 200-gallon storage tank on it and mounted an air compressor to force the paint or asphalt through the guns we were then using. At this time we began using barrier lines and it was necessary to put three guns on this machine, one six-inch gun in the middle with a right and left four-inch barrier gun. Our old pushcart machine had only one gun, a six-inch gun in the middle, which allowed the asphalt or paint to flow to the pavement and six-inch brushes would drag through this, making the line. With the untiring efforts of the Shop Foreman and his helpers, we finally got our new machine ready for a tryout. Much to our concern, the stripe we placed with this new rig was about like the one we placed on U.S. 277 in Jones County. We were now more determined than ever to get a good stripe. We started looking for different sights to guide the stripe by and finally ended up with a guide arm 23 feet long that was fastened to the front of our truck with a small wheel running down the pilot line, as shown in Picture No. 1.

When we got this problem worked out, we were faced with the problem of protecting our line from traffic. We put down an open asphalt line (with no cover material) and used blocks and flags of different kinds to protect it from traffic, as it usually took an hour for the asphalt to set so it would not smear if traffic passed over it. But traffic would become impatient following a slower vehicle and pass us and smear our line. Our troubles seemed to increase daily until the final slip up came when the air compressor failed to do her stuff and our tank and lines were blown to Kingdom Come. No one was hurt in the accident, but we dreaded telling the Boss and we figured our center striping days were over. After one look at the masterpiece that blew up, not leaving much to repair, the Boss gave us permission to build a new machine. By now we had a lot of new ideas for improvement over the old machine and we got together again with our shop force and built the present model, shown in Picture No. 2. We feel this was a vast improvement over the old machine and we are proud of it.

In the early years of this work, the location of the center line was a big problem. We would measure the pavement and try to follow the chalk lines from point to point, but we were unable to get a straight pilot line. After getting a machine that we could handle we had to find a way to get the pilot line worked out, so we got our engineering forces to help us. We use a method now of driving a nail through a pop bottle cap into the pavement 150 feet apart, and 50 feet apart on curves. After this operation we stretch a sixteen gauge wire from point to point, thus making our pilot line. This requires skill and patience and we take particular pains with this part of the work, as we like our spots as near one inch wide, six inches long, and six steps apart as we can get them. If they are closer together, at the speed we travel the spots run together, and this tires the operator immediately. We work at a steady, unhurried rate of speed and do not crowd the machine, as we have found from experience that if we go too fast we get a crooked line. We stripe an average of 20 miles a day under normal conditions.

You will note from the pictures of this machine we use that the bicycle wheel runs on the pavement when the machine is striping to operate our barrier guns which are automatic. At first we used a chain from the rear wheel to another wheel on the side of the frame, causing a horn to blow every 20 feet, but the operator would sometimes become confused as to which blow to use and this caused an uneven space on the barrier line. So this was replaced with the automatic system. We use an extra battery to get additional power. We were having trouble getting good edges and found that if we kept our asphalt under 150 degrees (usually about 140 degrees) it is better, and as our guns are equipped with full circulating connections this also eliminates freezing of the barrier guns while not in use. Our present machine has a 240 gallon storage tank with burners underneath so that if the asphalt gets too cold in the tank, the burners can be used to reheat it. We have contemplated using a larger tank, but with this tank the operator has a chance to get off his machine and stretch his legs while the tank is being refilled. The 240 gallons of asphalt will take care of twelve cubic yards of rock and will stripe about 5.4 miles of pavement.

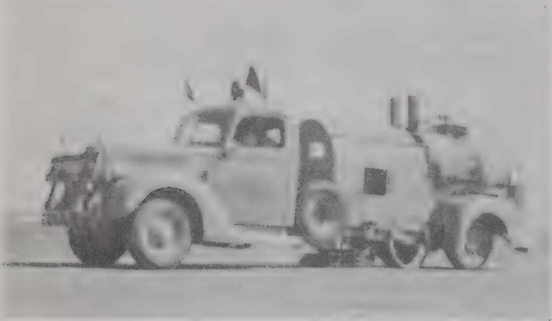
We now call your attention to Picture No. 3 which shows the spreader box. This spreads the rock and rolls it in one operation. We use three bridge hand rails for additional weight and we hope soon to secure our weight without the rails as they are hard to handle and have to be loaded on the truck when we move. After the surplus rock is removed from our raised line, we put in our yellow barrier line. We like the single gun type for this because we find if we go too fast traffic will not cooperate with us in keeping off the wet paint and we can stripe as fast as the paint dries and have very few smears. We use about sixteen gallons of paint per mile and six pounds of spears per gallon of paint.

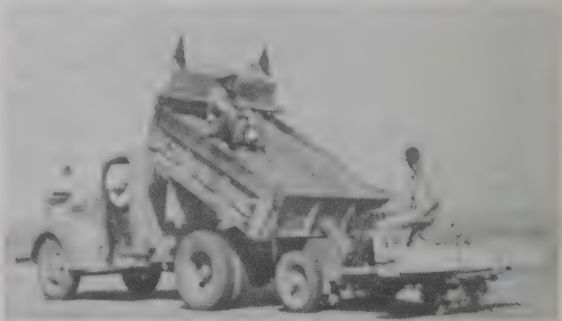
For the yellow stripe we use the beaded line and have a pilot wheel in front of the small yellow paint machine that follows the edge of the black line. This pilot wheel is spaced so that it shows the operator where to turn on and cut off the paint, which eliminates all measurements for locating the spacing for the barriers. We protect this yellow stripe by a "wet paint" sign at the beginning and end of the barrier lines, or about 3,000 feet apart. Between the "wet paint" signs we use blocks cut from old automobile tires about six inches long set on each end of the yellow line.

We like to have two operators for this work in order to relieve each other, as constant operation of this machine causes such strain and tenseness that one man cannot carry on this work for a whole day and secure a good straight line.

For safety measures, we use blinker lights on all equipment that is on the pavement, and 1,000 feet ahead of the stripe machine we have a truck with a blinker light. Also across the front of this truck we have a sign reading "Center Stripe Machine Ahead." On the stripe machine we use two blinker lights, one on the left side and one on top. Across the front of the center stripe truck we have a sign with an arrow on it stating "Keep right." Next comes the gravel spreader and then the booster tank which has a blinker light on the back with a sign on the rear of this truck to "Keep to the Right." We have found that it is much safer for our working crew to keep these units as close together as possible in order that the traveling public may pass all vehicles at one passing. This procedure keeps traffic from weaving in and out between the machines and trucks, thus endangering the lives of the crew and smearing the lines.

We like to do our work in a manner that is pleasing to the traveling public and we find that, generally, they will cooperate with us and are even complimentary when we place a good straight line. This gives us a lift and helps us along toward the goal of being the best center stripers in Texas.





2. 3.

1.

Picture No. 1
Guide arm with small wheel running down the pilot line.

Picture No. 2
Present stripe machine.

Picture No. 3
Spreader operations . . .

Picture No. 4
Herman H. Landrum beside his equipment - with some 5,000 miles of center stripe behind him.

4.

INTEROFFICE MEMORANDUM

TO: Mr. Greer

FROM: J. C. Dingwall

SUBJECT: Maryland Test Road Observation

Date September 26, 1951

Responsible

Desk D-8

We are continuing to glean whatever information we can from the results of the Maryland Test Road Experiment. Our research section has come up with some interesting observations and comparisons.

I am attaching hereto four copies each of three graphs which indicate as follows:

FIGURE 1

This graph is self explanatory. Note that damage done by tandem 32,000 pounds is about the same as that produced by a single axle load of 22,400 pounds.

FIGURE 2

The solid line indicates that if the 1950 traffic operating on U.S. Highway 90 east of Houston was placed on the Maryland Test Road pavement it would have a life expectancy of a little more than six years.

The dash line indicates that if all of the overloaded axles on U.S. Highway 90 were reduced to our present legal load and placed on the Maryland pavement the expected life of the pavement would have been about eleven years.

FIGURE 3

Figure 3 shows life expectancy of the Maryland pavement under the kind of traffic which moved over U.S. Highway 90 east of Houston from 1945 to 1950. For example, this 9"-7"-9" Maryland pavement could be expected to give about twenty-six years service under the U.S. Highway 90, 1947 traffic, but only 6.3 years under the 1950, U.S. Highway 90 traffic.

These charts, while highly theoretical, serve to illustrate the way postwar increases in truck traffic is shortening the life of pre-war pavements designed for lighter loads.

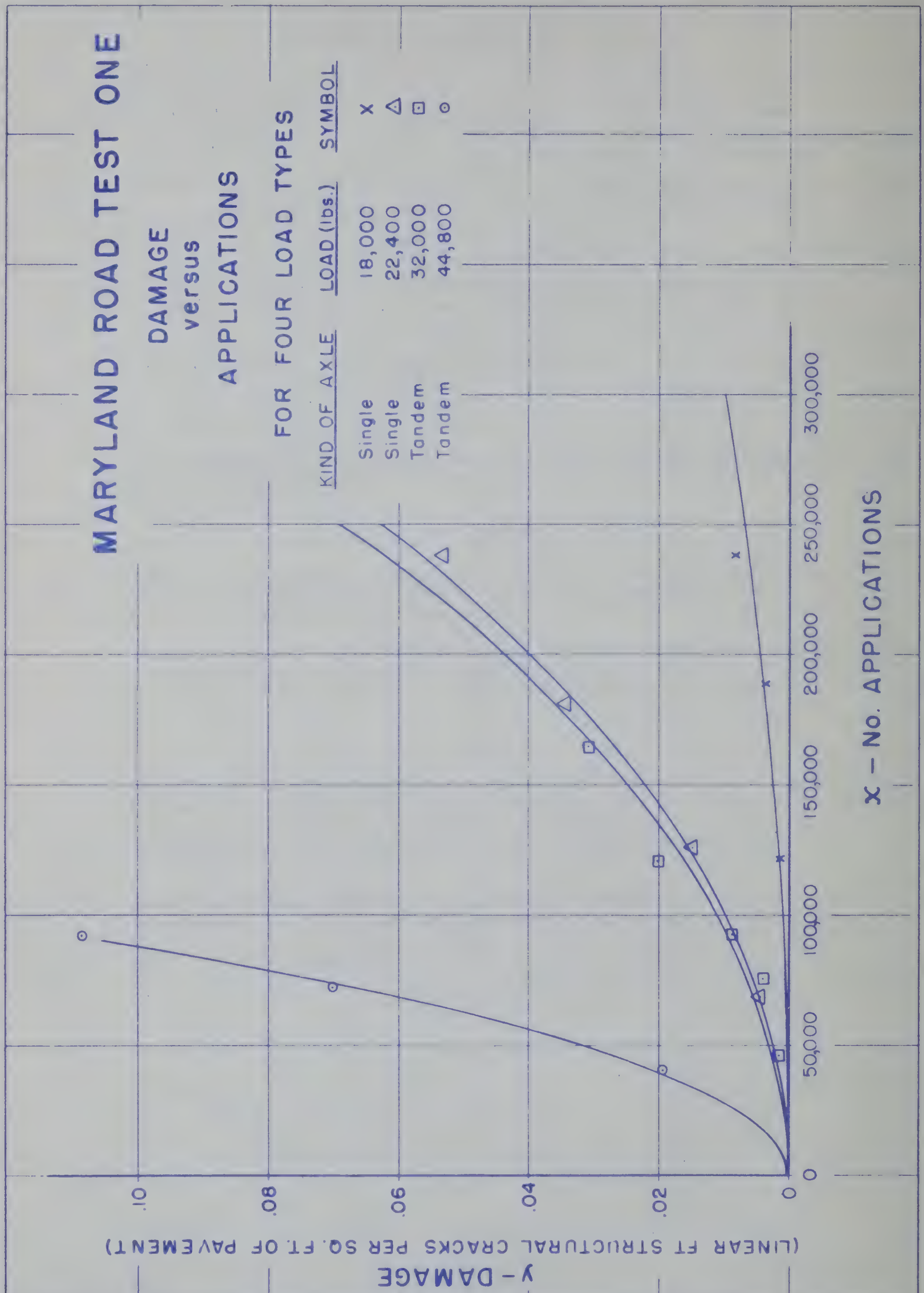
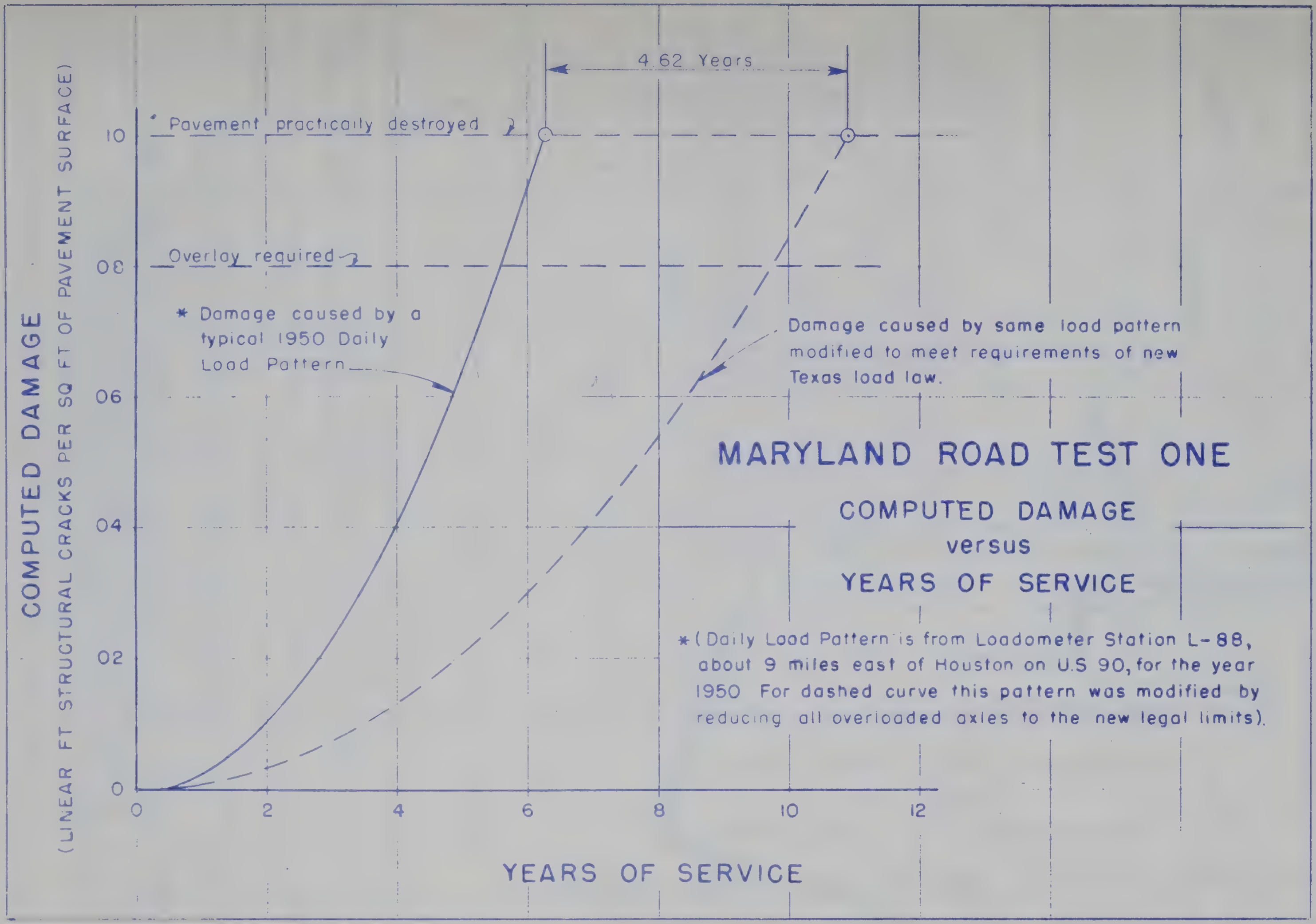

MARYLAND ROAD TEST ONE
DAMAGE
versus
APPLICATIONS
FOR FOUR LOAD TYPES
KIND OF AXLE
LOAD (lbs.)
SYMBOL
Single
18,000
x
Single
22,400
△
Tandem
32,000
⊡
Tandem
44,800
⊙
Y – DAMAGE
(LINEAR FT STRUCTURAL CRACKS PER SQ. FT. OF PAVEMENT)
.10
.08
.06
.04
.02
0
X – No. APPLICATIONS
0
50,000
100,000
150,000
200,000
250,000
300,000

FIG. I

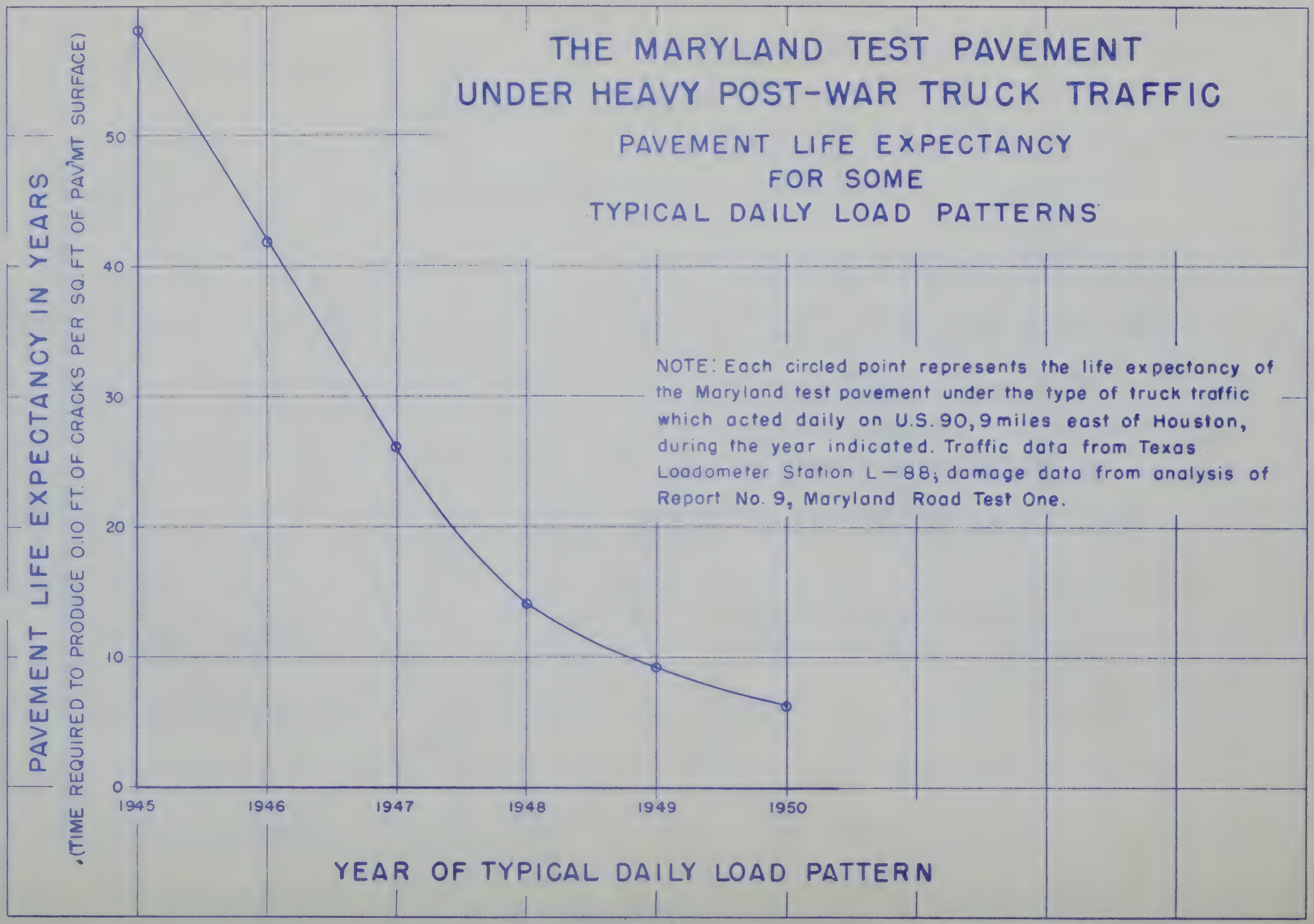
T.H.D. D-8



*(Daily Load Pattern is from Loadometer Station L-88, about 9 miles east of Houston on U.S 90, for the year 1950. For dashed curve this pattern was modified by reducing all overloaded axles to the new legal limits).

FIG. 2

T.H.D. D-8



THE MARYLAND TEST PAVEMENT
UNDER HEAVY POST-WAR TRUCK TRAFFIC

PAVEMENT LIFE EXPECTANCY
FOR SOME
TYPICAL DAILY LOAD PATTERNS

NOTE: Each circled point represents the life expectancy of the Maryland test pavement under the type of truck traffic which acted daily on U.S. 90, 9 miles east of Houston, during the year indicated. Traffic data from Texas Loadometer Station L—88; damage data from analysis of Report No. 9, Maryland Road Test One.

FIG. 3

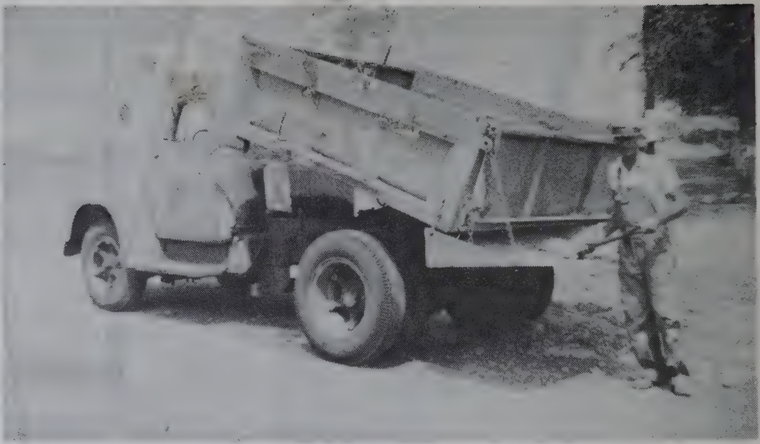
T.H.D. D-8

The Del Rio District compiles, mimeographs, and distributes periodically to personnel of District 22, a small bulletin called SAFETY NEWS.

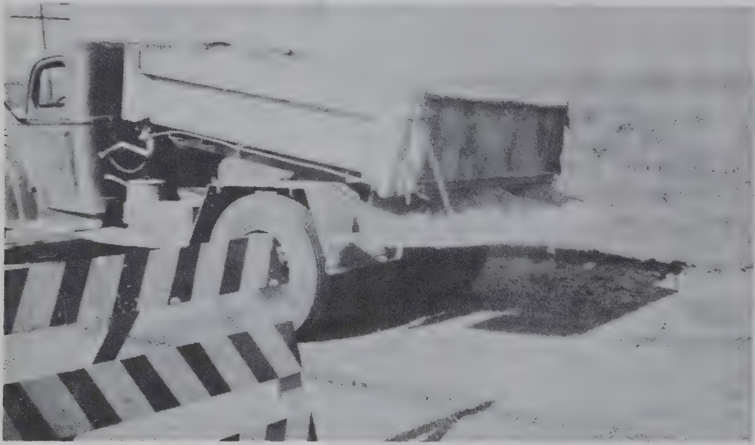
This bulletin carries announcements regarding District activities, information about new employees, transfers, and other news items which are of interest to employees in the District. In addition it is used to publish information pertaining to accidents occurring to the personnel and to encourage practice of safety among workmen. It even carries a list of employees whose driver's licenses have either expired or are due to expire within a few weeks to follow.

Undoubtedly many of the Districts have similar and equally effective means of distributing news to their personnel. If so, we would appreciate your furnishing, for publication in the Construction and Maintenance Bulletin, information and description of the media used and results obtained.

GRAVEL SHOVEL TROUGH



DISTRICT FIVE



Pictured is the gravel spreader built in District 5 for center stripe work, and a gravel shovel box.

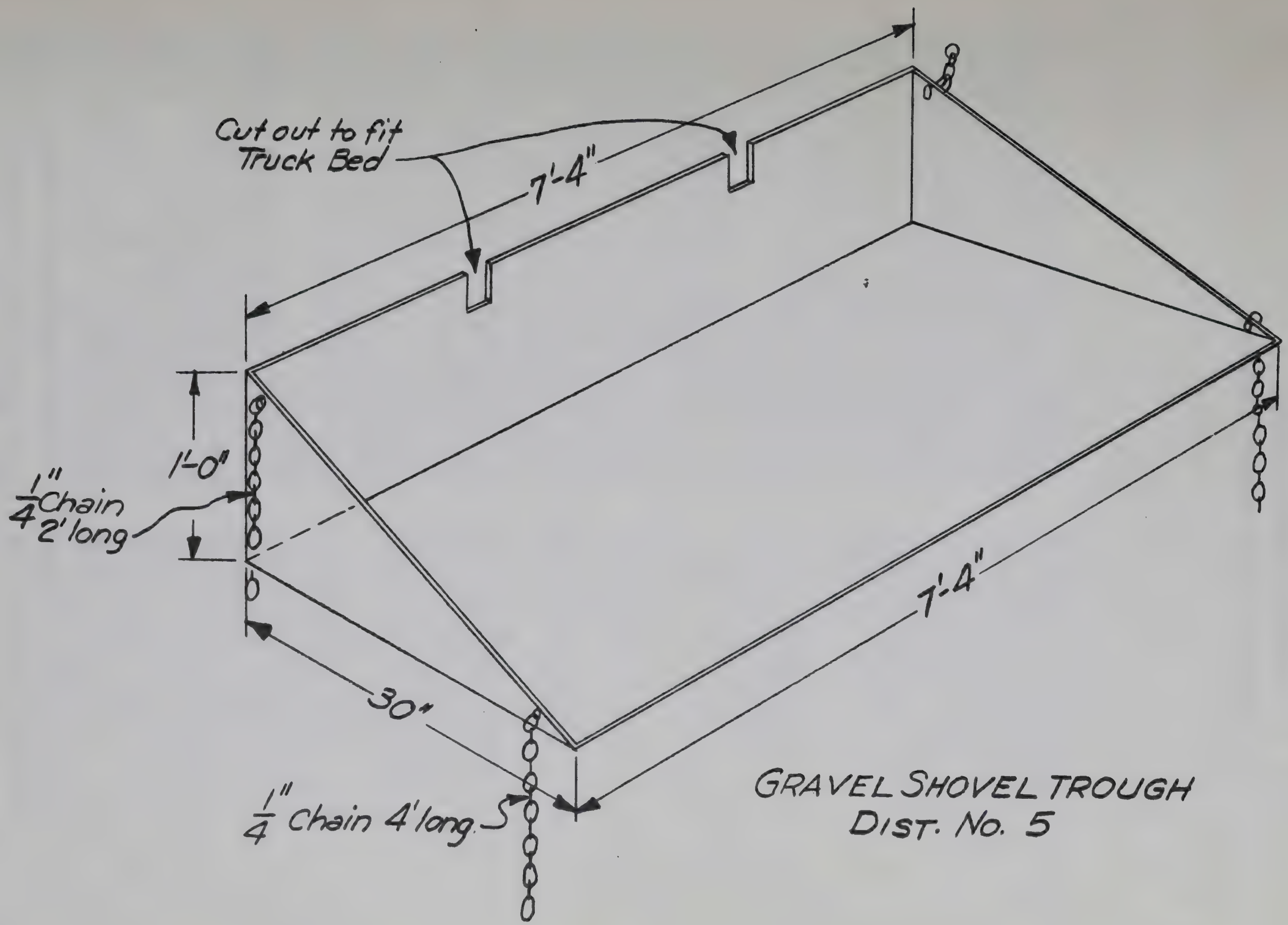
The first gravel shovel trough was made of wood by Mr. Henry Edmonds, Maintenance Foreman at Littlefield. This trough saved so much labor that we made a few changes and built one or more for each county of used traffic tread steel.

You will note that the tail gate chains are set for about two or three inch opening, which allows the trough to stay full of gravel. The trough is at a convenient shovel height, which allows two men to handle more gravel than three could handle from the truck bed.

In addition to asphalt patching, we use this trough on the paper truck for seal coat jobs.

The sketch of the gravel trough will explain in more detail its construction.

Submitted by
O. R. JUSTISS, *Equipment Supervisor*



GRAVEL SHOVEL TROUGH
DIST. No. 5

WHO SAID, "PREVENTIVE MAINTENANCE?"

JOHN B. NATIONS, *Director*

EQUIPMENT AND PROCUREMENT DIVISION

"Preventive Maintenance" is a term that you hear many times in our operation. And you are hearing it more and more today, for lots of reasons.

It could happen that 75 per cent of our present equipment would have to last out a five or six year emergency.

With limited budgets and inflated equipment operation costs, economy of operation is an absolute must.

What does a good preventive maintenance program accomplish? It will accomplish four objectives at a nominal, well-justified cost to the Department:

1. Keep equipment in safe operating condition.
2. Prevent road failures and keep equipment in efficient operating condition.
3. Cut maintenance costs by reducing need of major repair or overhaul of major units.
4. Add to the life of all components of your equipment.

Far-reaching as these basic objectives are, preventive maintenance consists simply of lubricating, adjusting, tightening, cleaning, and inspecting the various components and units of the equipment at intervals in keeping with its particular operation. Even though the administration of such a program involves more, when these simple functions are properly executed, the four major benefits of a good preventive maintenance program can be achieved.

1. Keeping equipment in safe operating condition. Equipment that has been properly inspected and serviced is ready for any road, load, or climate condition it meets in operation. You don't have to gamble on the condition of your equipment -- you don't run the risk of serious accidents as a result of weakened or damaged parts. Through proper servicing and inspection, you can spot the possibility of an accident before it happens. Frequent checks on the condition of his equipment make it possible to determine how efficiently and safely an operator is operating his equipment.

2. Preventing road failures. This goes hand in hand with equipment that is kept in safe operating condition. When equipment is always "ready for the road," it helps to keep your work moving. In this way, preventive maintenance puts more efficiency into operations, and at the same time, lowers operating cost. Many road failures are not the result of improper or too little maintenance, but the direct result of no preventive maintenance. That is because with preventive maintenance, weakened, breakdown-producing parts are spotted before real trouble strikes.

3. Avoiding high operating expense. You can put a stop to too much maintenance by properly servicing, repairing, or replacing major units before they actually break down. Major overhauls mean a lot of "down time" on equipment and loss of working time. Many major repairs are the result of a minor component's "going out" to create more severe damage in a major unit. This can be prevented through proper servicing and inspecting with a good preventive maintenance program. It costs less of your time and money to repair or replace damaged

parts than to conduct major overhauls that could have been avoided.

A good preventive maintenance program can also be used to establish an operational "pattern." In other words, through carefully-kept records, you can determine if a particular phase of your operation is causing a consistent failure in certain parts. With information of this nature, you can alter your operations or scheduling to prevent a "failure pattern," or provide necessary maintenance to avoid costly repairs. This results in more efficient, lower-cost operations.

4. Prolonging the life of all components. Every equipment manufacturer knows the life expectancy of every part in his equipment. The life expectancy of a component part is based on several things: type of equipment, type of operation, operating conditions, frequency and thoroughness of inspection and servicing, mileage and road speeds, and others. An operation that does not include a good preventive maintenance program for its equipment will seldom receive the full life expectancy of the equipment. A properly conducted program can be "tailored" to an individual operation. It takes into consideration each of the factors affecting life expectancy and provides the means to achieve the full life.

Prolonging the life of all components is possibly more important today than in the past few years. By making equipment last longer, you have more dependable, more efficient, and more profitable operations. Through carefully kept records of operation and maintenance, a good program helps you to determine the life expectancy for particular parts. Knowing the expected life of a certain part, you are posted in advance of many failures that could lead to costly repairs and expensive tie-ups.

A good preventive maintenance program, set up for your particular operating conditions, offers you all these advantages. It gives you more efficient operating with lower operating expense. It adds extra miles of efficient operation to your equipment. A good preventive maintenance program more than pays its way!

A logical question now is how to go about setting up a program that will achieve these four objectives for your operation -- a program that will do an equipment saving job for you.

Experience proves that there is no general plan that cannot be improved by adapting it to your own particular operation. So, the first step is to set up a specific "tailor-made" plan. We will be happy to supply such a plan upon request. With this information available, you can tailor a preventive maintenance program that will save your equipment -- save you time and money.

Set up a schedule and stick with it. P. M. schedules are normally set up for inspection, lubrication, adjustment, and replacement of units on predetermined mileage intervals. Once your schedule is established, it is necessary to follow it as closely as possible.

Your P. M. program won't pay off if you lubricate a truck at 30, 000 miles when the schedule called for lubrication at 10, 000 miles. The Equipment Supervisor's 100 per cent cooperation is needed to insure that schedules are kept and that employees are aware of benefits derived from a good preventive maintenance program.

Trained personnel for a better "equipment saving" job. It is your responsibility to make sure that your inspectors and servicemen are thoroughly trained in their specific jobs. These men must not only be skilled in performing the service functions required, but they must be alert in finding and reporting possible trouble or failures.

Carefully kept records tell the "saving story." Just as "you can't tell the players without a program," you can't determine the "score" of your P. M. program without carefully kept records. Good records will tell whether your program is operating profitably or whether it is costing more than it saves.

Thorough records will also permit you to determine "failure patterns" of different units and help you take steps to eliminate such patterns. They will also show whether you are underservicing or overservicing your equipment and help you set up the most efficient schedule.

This article has covered the high spots in setting up and running a good preventive maintenance program. In order to get the best results from this program, the plan should be sold to the whole organization -- more especially to the operators of our equipment.

The time to start this program is now!

* * *

ABOUT THE DISTRICTS

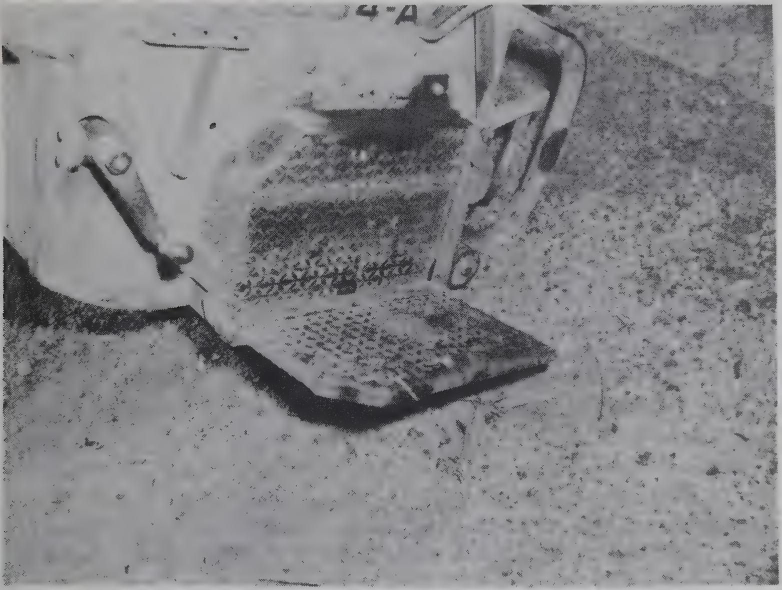
MAINTENANCE DIVISION, DISTRICT 12

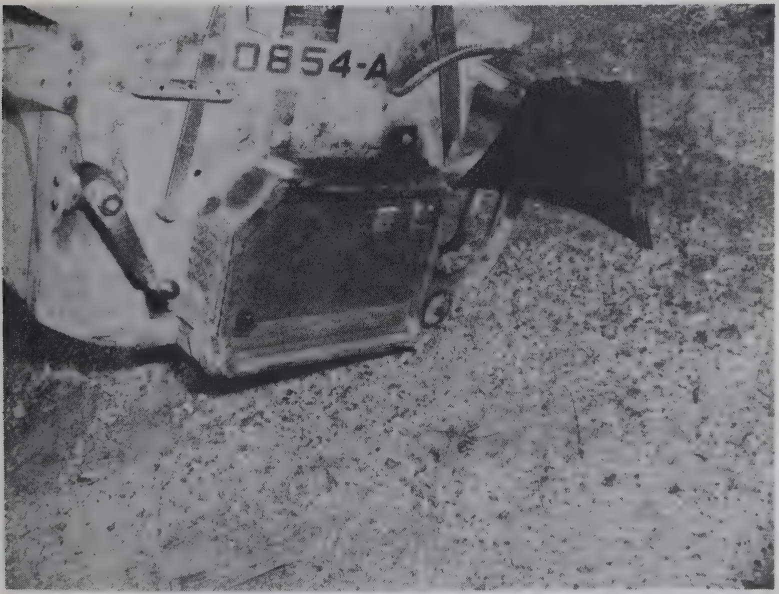
Front row: (Sitting) L.T. Mings, Maintenance Superintendent; George P. Munson Jr., District Maintenance Engineer; R.A. Scott, General Foreman; Seth Hoke, Maintenance Foreman; Gene Coddou, Maintenance Foreman; Wm. Willrodt Jr., Maintenance Foreman; and W.L. Werneberg, Maintenance Foreman.

Second row: (Standing) Mrs. Evelyn Lund, District Office Clerk; Mrs. Mary Negrete, Junior Clerk; (Sitting) W.J. Moore, Chief Inspector; C.W. Ramsay, Special Foreman; J.L. Stephenson, Maintenance Foreman; Rufus Hoke, Maintenance Foreman; R.D. Self, Maintenance Foreman; Johnny Vyvial, Maintenance Foreman; B.F. Pool, Special Foreman; and Wayne Butler, Maintenance Foreman.

Back row: (Standing) W.E. Kay, Marine Job Foreman; J.H. Doss, Maintenance Foreman; Sloan Brown, Construction Foreman; Dale Marvel, Engineer Assistant; Jas. E. Grayson, Junior Draftsman; Bert DeShazo, Special Foreman; W.M. Hilton, Junior Draftsman; R.P. Krueger, Special Foreman; and Herman Rankin, Maintenance Foreman.

DISTRICT 18'S FOLDING STEP USED ON AGGREGATE SPREADER BOX





The use of the folding step on an aggregate spreader box eliminates the necessity of the operator running along beside the spreader box when aggregate is being placed. It also eliminates the necessity of the operator jumping on and off the box when the speed is such that he cannot keep up with it by running. In folded position, the step does not increase the width of the box. This allows passage over narrow bridges.

The step can be raised to folded and latched position with foot quickly without delaying operation of the machine. Since this step is made of tread plate there is very little possibility of operator's foot slipping when stepping on and off. This step offers convenience and safety to the operator without decreasing the efficiency of the spreader box.

COMMISSION
E. H. THORNTON, JR., CHAIRMAN
FRED A. WEMPLE
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT
AUSTIN 14, TEXAS

STATE HIGHWAY ENGINEER
D. C. GREER

October 31,1951

IN REPLY REFER TO
FILE NO. D-16

Mr. J.C. Roberts
District Engineer
P.O. Box 150
Abilene, Texas

Subject: Highway Traffic Signals-Duro-Test Long Life Globes

Dear Mr. Roberts:

This is to acknowledge receipt of and to thank you for the report concerning your test on the Duro-Test 67 watt 5000 hour traffic signal light bulb.

We are glad to receive your favorable opinion on this bulb. They are now on contract and available to all Districts on request. The District requisitions should be made out for delivery by the Duro-Test Corporation, East Bergen, New Jersey.

These globes are available in both the 67 watt 5000 hour type and the 100 watt 4000 hour type; both carry the same guarantee except for the number of hours.

Sincerely yours

D.C. Greer
State Highway Engineer

Fred T Bennett

Fred T. Bennett
Engineer, Traffic Services

WmJA:bm

TEXAS HIGHWAY DEPARTMENT

Abilene, Texas

REFER TO FILE NO.

October 29, 1951

Subject: Report on Long Life Traffic Signals - Duro Test Long Life Globes

File D-16 F T B

On September 8, 1950 we received 480 Duro-Test 67 watt 5,000 hour guarantee long life traffic signal bulbs. On September 12, 1950 we installed 4 of the Duro-Test bulbs in a flashing beacon traffic signal located in Weinert in Haskell County, which was a new installation. Beginning on the above date we started replacing burned out bulbs with Duro-Test long life bulbs in our traffic lights as well as placing them in new installations. In order to have a record of the life of the 5,000 hour guaranteed bulbs, we dated the bulb at the time of installation but later learned for record purposes that it was necessary to keep a list on when these bulbs were installed in addition to dating the bulb.

A few of the Duro-Test bulbs have been replaced due to breakage. In each case the light itself has been damaged by high loads passing under it and breaking some of the bulbs. This is especially true in the Snyder area. We have now raised these traffic lights and have practically eliminated that trouble. We have not replaced a single Duro-Test bulb due to being burned out.

We have found that upon installing the Duro-Test bulbs that care must be taken not to tighten the globe too tight in its socket to prevent a breakage of the small black "glass-like" ring at the base. If the black ring is cracked or broken the bulb will not burn.

In our opinion the Duro-Test long life bulbs are very practical. They reduce to the minimum the replacement of bulbs and reduce maintenance costs. The traffic light is operating more effectively at all times.

We have previously submitted to your office a list of the lights in this district which are equipped with Duro-Test long life signal bulbs, giving the make, type and location of the signal installations.

Sincerely yours,

J. C. Roberts

J. C. Roberts
District Engineer

RLD-o

COMMISSION
E. H. THORNTON, JR., CHAIRMAN
FRED A. WEMPLE
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Amarillo, Texas
September 7, 1951

FILE NO.

REPORT OF ACCIDENT REVIEW COMMITTEE
September 7, 1951

The Accident Review Committee met at 9:00 a. m. on Friday, September 7, 1951 for the purpose of reviewing two recent accidents in District No. 4. The following attended this meeting:

J. M. Harris	Dee Lehman
J. S. Gaines	W. A. Riney
Reuben Bewley	Eunice Best

The meeting was called to order by J. M. Harris, Chairman, who presented the first of the two accidents to be reviewed. The report was as follows:

1. Accident occurred on August 2, 1951 and was the first accident to occur after the formation of the Accident Review Committee. It was brought out that this report should have been submitted to the District Office immediately after the accident occurred and not three weeks later.

The accident involved a 1949 Chevrolet Truck and 1947 Chevrolet Pickup. Mr. - - - , driver of the Chevrolet Truck, pulled into the warehouse to pull a third vehicle that had dead battery. After pulling out of the warehouse, he unfastened the chain and pulled away from the equipment in order to fasten chain on the front of the dead equipment and pull,in order to start. The operator of the dead equipment left cab to place chain on equipment and was not watching movement of other equipment. As Mr. - - - was in the process of backing toward the dead equipment, Mr. - - - , driver of the Chevrolet Pickup backed out of the warehouse. Because of the height of the truck, Mr. - - - could not see the pickup being backed out of the warehouse. Mr. - - - stated that he did not see Mr. - - - backing until too late to avoid the accident. The result was a ripped door on the pickup which will cost approximately $40.00 to buy new door and place on equipment. Neither Mr. - - - or Mr. - - - have had accidents involving equipment.

After review by the committee, it was decided that this was a preventable accident, and the operator of the dead equipment should have been on hand to help watch the process of backing toward his equipment in order to avoid any accident. It was therefore, decided that blame for this accident should be placed and shared by each of the three involved in movement of the three pieces of equipment.

2. Accident occurred on September 5, 1951 at 10:15 a. m., U.S. Highway - - - in - - - County.

Mr. - - - , driver of the third piece of equipment involved in the accident, was going west on U.S. Highway 66 to paint guard posts. He was driving a 1946 Ford Truck. As he approached the point where paint was to be applied he slowed down to approximately twenty or twenty-five miles per hour. Mr. - - - , driver of Equipment No. - - - , Chevrolet Truck had been following Mr. - - -' truck and was driving at approximately forty-five miles per hour. When he saw that Mr. - - - was in the act of coming to a stop, he decided to go around the Ford Truck. There was good sight distance and he could see that there was no vehicle approaching. He did not signal that he was about to go around the Ford Truck. A third car driven by Mr. - - - - - - of California and driving a Pontiac and going about sixty miles per hour saw both trucks and also saw no approaching vehicle. He decided to go around both trucks, but noted that Mr.- - -'s truck was straddling the center-stripe. He did not signal that he was going around Mr.- - -'s truck. In the process of both cars passing Mr. - - -' Ford truck, driver of the Pontiac struck the left front fender of the Chevrolet Truck, Equipment No. - - - , which caused the Chevrolet to swerve and knock the Ford Truck driven by Mr. - - -. Mr.- - - said that he tried to apply the brake on his Chevrolet, but it failed to hold. The brake peddle was worn smooth. Both the Pontiac and Chevrolet Truck were damaged, the cost for repair placed at approximately $250.00 and $285.00 respectively.

The accident was classed as a preventable accident with equal blame on the driver of the Chevrolet Truck and the Pontiac. The Highway Patrol who made an investigation of the case, placed blame on both parties and showed them where each was at fault. He did not place charges on either. The proper signaling on the part of each driver might have prevented the accident. Mr.- - - has not had a previous accident with equipment.
The meeting adjourned at 10:30 a. m.

J. M. Harris
J. M. Harris, Chairman

Eunice Best
Eunice Best, Secretary

DISTRICT 13

MINUTES

REVIEWING COMMITTEE ON ACCIDENTS INVOLVING HIGHWAY EQUIPMENT

The above Committee had a meeting on Saturday morning, October 6, 1951, with the following members present:

H. C. Veazey, Assistant District Engineer; Zay Johnson, District Maintenance Engineer; Otto Sladczyk, Equipment Supervisor; Ralph E. Rinn, Chief District Accountant.

Mr. H. C. Veazey presided at the meeting, discussing briefly each accident, and then called upon the employee involved, including the Foreman, to discuss the accident and suggest ways and means of prevention of this accident or future accidents of a similar nature. The accidents covered were as follows:

1. Overturning a loaded dump truck on curve.
   Driver, - - - .

   After a discussion, it was the consensus of opinion that this accident was caused by excess speed for conditions and a flat tire.

2. Rotary broom struck in rear by approaching car.
   Operator, - - - .

   Accident caused by lack of visibility due to dust, and lack of precaution on the part of the operator of the automobile striking the broom. It was agreed that brooming operations are dangerous and that it is difficult to maintain complete safety measures for all concerned. The practicability of flagmen was discussed. Ideas for safety features for brooming operations are to be solicited from all employees.

3. Loosened end-gate striking automobile while passing on highway.
   Operator, - - - .

   Accident caused by end-gate not being securly fastened on both sides. After discussion, it was found that this practice is general throughout the District. Two recommendations were made to avoid accidents of this type in the future.

   (1) To install snap hooks on the end of chains.

   (2) Install a loop -- to be placed over release handle.

   The equipment Supervisor is to investigate these two recommendations.

4. Spraying car with mud-asphalt.
   - - - representing mudjack crew.

   This problem was discussed at length and several recommendations were made. Apparently, spraying occurs when old sections are being pumped that had been mudjacked previously. One opinion on the rubber rim now being used is that it is of no good use. Recommendations included:

   (1) Shutting off the mudjack machine by the operator at the time a car is passing.

   (2) If pressure is being built up and can be determined by the action of the hose, the machine should be shut off.

   (3) The construction of a cone-shaped device to place over the hose at the nozzle.

(4) Some sort of shield to be placed between the mudjack hose operator and passing traffic.

(5) To have kerosene or varsol and a supply of clean rags with the mudjack equipment to clean off cars if they are sprayed.

Ideas on preventive measures of this operation are also to be solicited.

5. Mowing machine overturning on shoulder into ditch.
Operator, - - -. Mr. - - - unable to attend meeting as he is in the hospital.

This accident caused by mowing on shoulder with a steep slope, with the cutting blades nearest the riding surface of the highway, and using incorrect gear in starting mower. Beside steep ditches and on narrow shoulders, it is sometimes necessary that the machine be placed partially on the riding surface of the road, with the blades extending toward the shoulders and ditches.

6. Mudjack machine turned over.
Responsible employee, - - - .

This accident caused by pin not being placed while machine was being pulled. This precaution should have been taken.

7. Overturning water truck while watering shoulder.
Driver, - - - .

This accident was caused by misjudgment of distance in backing toward a culvert on a fresh dirt shoulder on a high, steep slope which caved in. This work is ticklish and requires good judgment which, it was agreed, depends entirely upon the operator.

8. Spraying car with mud-asphalt.
Responsible employees, - - - , and - - - .

This accident discussed in connection with the other spraying accident above.

9. Repair truck being struck while turning across highway.
Operator, - - - .

Mr. - - - could not recall the details of the accident. This highly dangerous practice was discussed with the recommendation that all driving precautions be observed at all times by operators of equipment.

At the conclusion of the discussion of each accident, Mr. Veazey stressed the importance of safety precaution in all phases of work, and expressed the hope that none of the employees present at this meeting would be called to any future meetings of the Reviewing Committee. He also pointed out the importance of practicing safety measures not only for the saving of expense to the Department in loss of equipment and man hours, but to avoid the hardship that is borne by the employees in loss of wages, permanent disabilities, and no protection for their families. The next meeting of the Committee will depend upon future accidents.

Ralph E. Rinn, Secretary
Reviewing Committee

RER:hd

Texas Highway Department
Form 433-B 1-51-40m

8866-151-40m

INTEROFFICE MEMORANDUM

TO: Mr. John A. Waller
Date September 14, 1951

FROM: P. S. Bailey
Responsible

SUBJECT: Magnetic Nail Picker Operations
Desk D-3

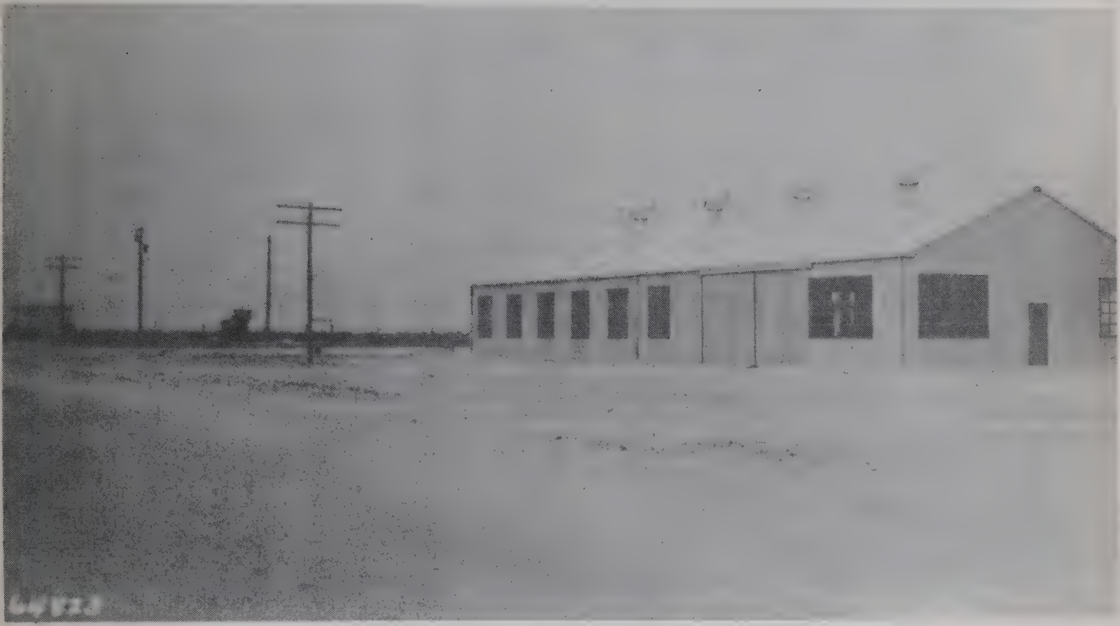
The new Magnetic Nail Picker was placed in operation on June 21, 1950. During the period from that date until August 31, 1951, the machine accomplished the results shown in the tabulations below.

OPERATION OF NAIL PICKER
(6-21-50 to 8-31-51)

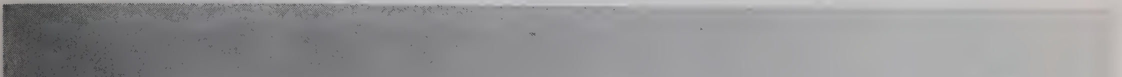
DISTRICT NO.	NUMBER OF DAYS WORKED	NUMBER OF MILES COVERED	POUNDS PICKED
14	17	384	2,857
23	16½	401	5,224
8	25½	622	11,026
5	22	254	9,164
4	12	290	4,771
25	9	148	3,627
3	19	244	11,548
2	32	689	15,404
18	24	389	11,319
1	8	133	1,171
10	10	194	2,985
11	19	494	6,165
20	4	336	971
3	1½	Olney Tornado	226
9	38	651	10,643
15	14½	301	4,497
16	5½	63	1,588
21	5½	129	2,607
TOTALS	283 days	5,722 miles	105,793

PSB:bw

Nothing Like A Face Lifting . . .



BEFORE New warehouse on U.S. 90 north of Del Rio, January 17, 1950.

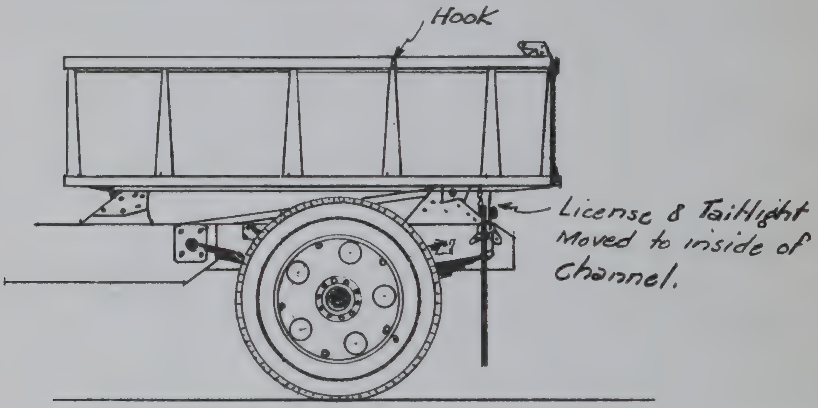


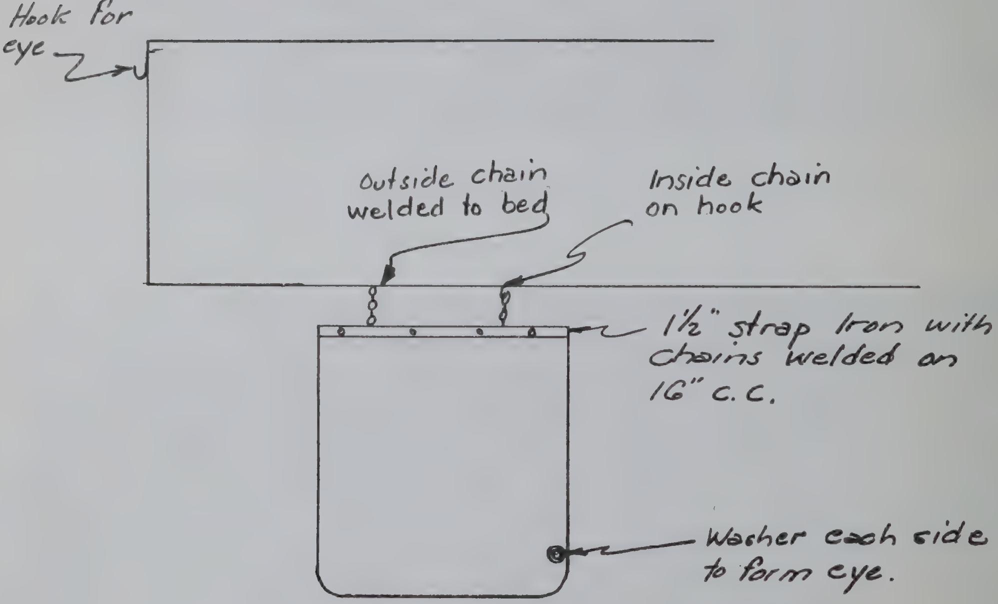
AFTER Very colorful, green grass, roses, abelias, and red crape myrtle. . . August 15, 1951. A layout of the grounds prior to erecting the warehouse can achieve such attractive premises.

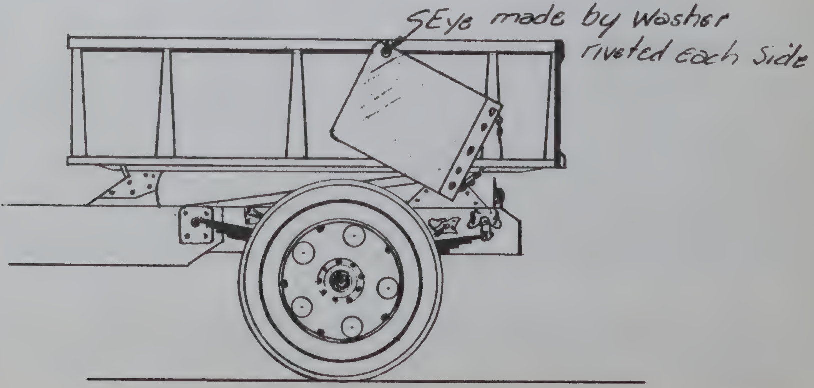
DISTRICT 13'S METHOD OF ATTACHING MUD GUARDS TO DUMP TRUCKS

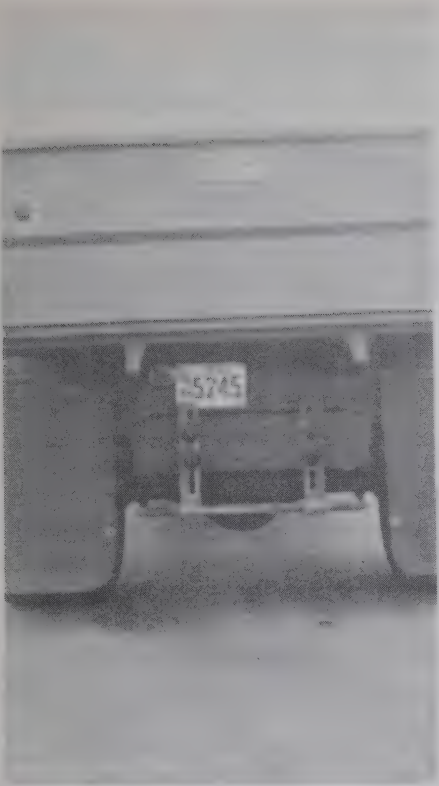
Otto Sladczyk, Equipment Supervisor

The following sketches and pictures show our method of attaching mud guards on dump trucks and the method of holding them on the equipment when dumping material from the equipment into stockpile.




Hook for eye
Outside chain welded to bed
Inside chain on hook
1½" strap Iron with Chains welded on 16" c.c.
Washer each side to form eye.

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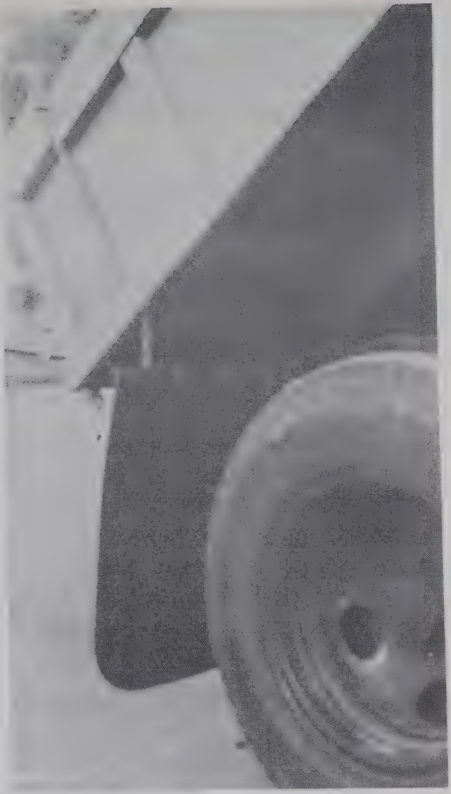
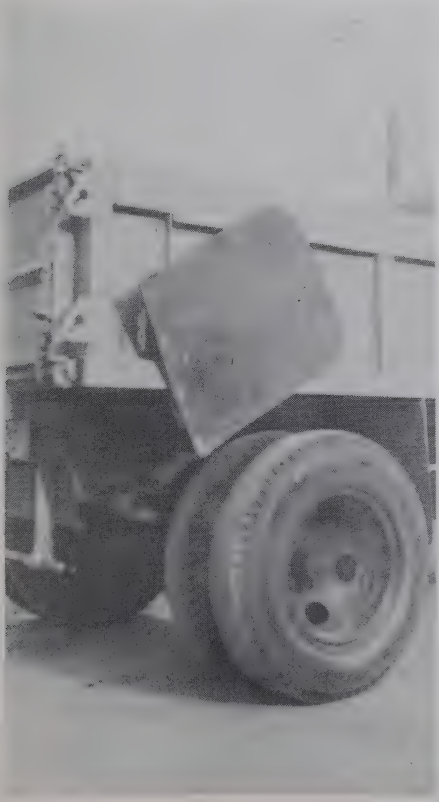




"Comments From the Traveling Public"
OVER THE HIGHWAYS

. . . It will be appreciated if you will furnish the New Orleans District with 200 copies of your pamphlet, "Instructions to Flagmen."

These pamphlets are valuable for traffic control in connection with construction work in this District.

FOR THE DISTRICT ENGINEER:

H. N. Anderson
Chief, Safety Branch
Corps of Engineers,
U.S. Army
New Orleans 9, Louisiana

* * *

. . . Congratulations on your instructions recently issued to flagmen on road construction jobs, advising them of their responsibility in the matter of safety.

We are a sales organization, constantly traveling the State of Texas and adjoining states, with offices in Dallas and Houston. As Lighting Sales Engineer for our organization, I spend a great deal of my time on our highways and have observed a regrettable lack of correct safety procedures on the part of these road repair crews and flagmen.

Your instructions seem to cover most of the causes for activities, which I felt were being done incorrectly, with the exception of one.

In the past several months, I have had to come to emergency stops, due to road construction not sufficiently distantly falgged. Also, and possibly the major safety error, the flagmen blend into the background so that they are not distinct. It is difficult to see denims against asphalting equipment or against an asphalt road background, or even green trees. On several occasions, road repair crew operations over the crest of a hill have not been flagged at the hilltop or prior to the hilltop -- this is a very dangerous situation.

Many thanks for your instructions to the road crews.

Billy L. Cook
Lighting Sales Engineer
Peabody Brothers
Dallas, Texas

* * *

. . . Why don't you have stop signs where a road approaches or crosses a State Highway?

There are not enough trees planted along highways to accommodate resting places. Eating tables were unclean, and grounds surrounding parks were unkept.

Mrs. Paul Cannaday
Indianapolis, Indiana

• • •

. . . I am a Major in the United States Air Forces and I wish to report the following traffic violation of a State Highway Truck Number --- with State License Number --- on the --- Highway from ---, Texas to ---, Texas at approximately 4:50 P. M. on 19th September 1951:

I was in a car driven by Sergeant --- of the Texas Air National Guard, traveling at a speed of appriximately 60 miles an hour, when Sergeant --- said "Look at that truck Major, he is almost running over me." He was traveling (the truck driver) within ten feet of us, waiting to pass. Finally he tailed us until he could pass and then at a curve a short distance later, he passed another car on the curve and cut back in so sharply in front of the car to avoid another car that I hardly see how he could have avoided wrecking both truck and car. We watched him continuously after that for a period of about five miles and his speed was from 60 to 65 miles an hour in the large Utility Truck and passed cars without caution as to his own safety and driver of the car. As I remember, there were three men in the seat of the truck, including driver. His speed lessened when we finally passed him and I wrote down the number of the truck and license number. I think he saw me write down the truck number as we passed him for that particular purpose.

I have never in my life reported any truck of any concern for traffic violation but in this instance I think it deserves the attention of someone in authority. This flagrant violation of traffic safety, especially by a highway truck of the State of Texas, was disgusting and I feel needs the attention of the state.

I am not writing this letter asking that anyone be discharged, but I think the driver of that truck should be suspended from driving a state vehicle until he knows the value of life and limb.

Trusting that this type of letter is not considered from a crank but is written in the interest of life and limb, and as well for the State of Texas, of which I am a proud citizen.

(Signed)

• • •

. . . Send your road engineers to Indiana to learn to bank the curves. Otherwise we enjoyed our trip through Texas.

New Albany, Indiana

• • •

. . . Roads were good except for lack of white or yellow line on U.S. 290. Black line does not show up at night.

San Diego, California

• • •

. . . Texas roadside parks do not provide water or rest room facilities, nor do they seem to be very well kept up. Those in Ohio are better in every way.

Columbus, Ohio

• • •

. . . In the very early 1900's, the distance from Galveston to San Antonio was 276 miles and it required two days hard driving to make the trip. In 1910 when I began driving, we were able, on an early start, to reach Columbus by nightfall!

The roads, mostly trails, were terrific, mud in deep holes being the worst offender -- and I remember that boys in the neighborhood of Glidden would water the road in dry weather and make it impossible to get through without help of a snatch team of horses which they had ready for just that purpose.

Further west, rocks on the road made driving difficult, and it took us one hour to drive four miles near Belmont.

And in Houston which was noted for its mud in those days, we were pulled through mud on "telephone road."

The road map and pretty descriptive material to which I looked forward eagerly, was delivered yesterday by the mail carrier. Thank you very much for this courtesy.

We have traveled over most of the U.S.A. and we are very proud of the fine job the Texas Highway Department has done.

Pardon me for this lengthy "letter of thanks."

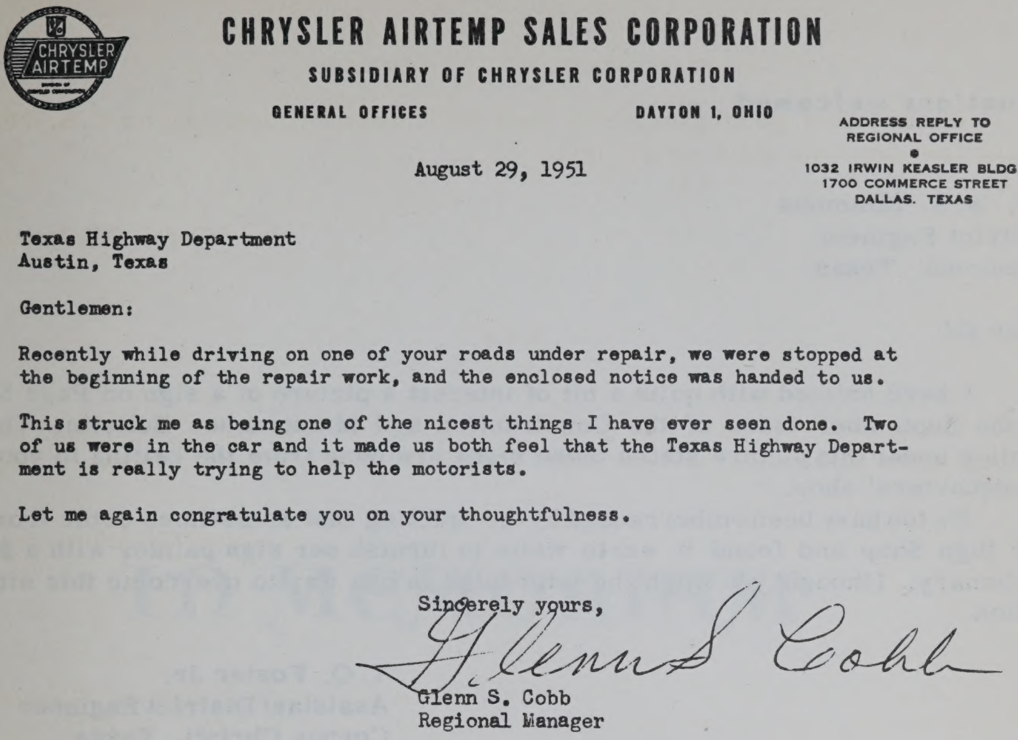
Julius W. Jokusch
1728 Sealy Avenue

• • •

. . . Your state has practically everything - good, bad, and indifferent. Roads are very good. The only thing we did not like was the narrow bridges and culverts in some sections -- very dangerous.

Dyersville, Iowa

• • •



CHRYSLER AIRTEMP SALES CORPORATION
SUBSIDIARY OF CHRYSLER CORPORATION
GENERAL OFFICES DAYTON 1, OHIO

ADDRESS REPLY TO
REGIONAL OFFICE
1032 IRWIN KEASLER BLDG.
1700 COMMERCE STREET
DALLAS. TEXAS

August 29, 1951

Texas Highway Department
Austin, Texas

Gentlemen:

Recently while driving on one of your roads under repair, we were stopped at the beginning of the repair work, and the enclosed notice was handed to us.

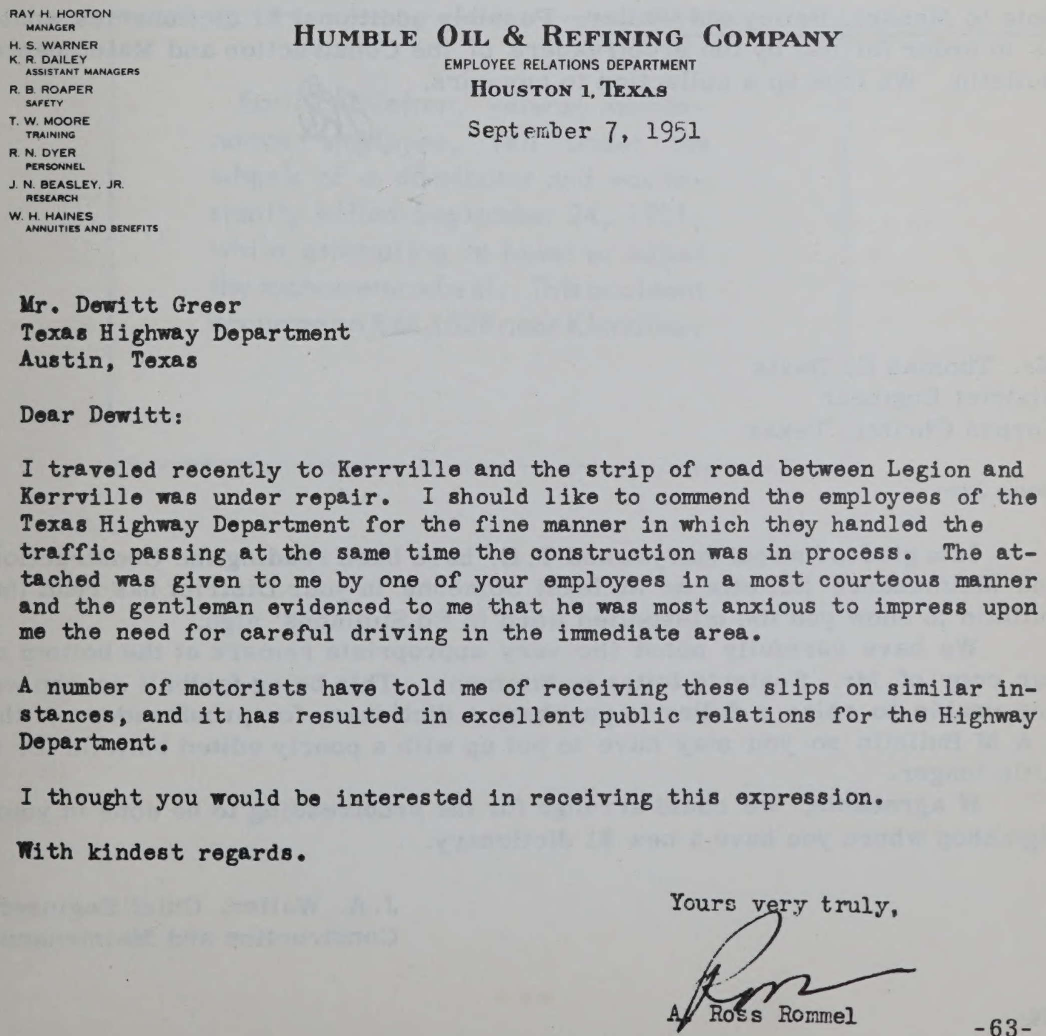
This struck me as being one of the nicest things I have ever seen done. Two of us were in the car and it made us both feel that the Texas Highway Department is really trying to help the motorists.

Let me again congratulate you on your thoughtfulness.

Sincerely yours,

Glenn S. Cobb

Glenn S. Cobb
Regional Manager



RAY H. HORTON
MANAGER
H. S. WARNER
K. R. DAILEY
ASSISTANT MANAGERS
R. B. ROAPER
SAFETY
T. W. MOORE
TRAINING
R. N. DYER
PERSONNEL
J. N. BEASLEY, JR.
RESEARCH
W. H. HAINES
ANNUITIES AND BENEFITS

HUMBLE OIL & REFINING COMPANY
EMPLOYEE RELATIONS DEPARTMENT
HOUSTON 1, TEXAS

September 7, 1951

Mr. Dewitt Greer
Texas Highway Department
Austin, Texas

Dear Dewitt:

I traveled recently to Kerrville and the strip of road between Legion and Kerrville was under repair. I should like to commend the employees of the Texas Highway Department for the fine manner in which they handled the traffic passing at the same time the construction was in process. The attached was given to me by one of your employees in a most courteous manner and the gentleman evidenced to me that he was most anxious to impress upon me the need for careful driving in the immediate area.

A number of motorists have told me of receiving these slips on similar instances, and it has resulted in excellent public relations for the Highway Department.

I thought you would be interested in receiving this expression.

With kindest regards.

Yours very truly,

A. Ross Rommel

Donations welcomed . . .

Mr. W. E. Simmons
District Engineer
Beaumont, Texas

Dear Ed:

I have noticed with quite a bit of interest a picture of a sign on Page 52 of the September issue of the Construction and Maintenance Bulletin. The caption under this picture states these signs are hung from the ceiling in your headquarters' shop.

We too have been embarrassed by the spelling that sometimes come from our Sign Shop and found it worth while to furnish our sign painter with a $1 dictionary. I thought you might be interested in one way to overcome this situation.

T. O. Foster Jr.
Assistant District Engineer
Corpus Christi, Texas

Note to Messrs. Bailey and Waller: Possibly additional $1 dictionaries would be in order for use by the proofreaders of the Construction and Maintenance Bulletin. We took up a collection to buy ours.

Mr. Thomas C. Davis
District Engineer
Corpus Christi, Texas

Dear Sir:

I am glad to find out that you and T. O. have been reading the Construction and Maintenance Bulletin or at least someone in your District has read the bulletin to show you the misspelled word in Ed Simmons' sign.

We have carefully noted the very appropriate remark at the bottom of our copy of Mr. Foster's letter to Simmons. This being football season we are unable to raise a dollar to purchase a dictionary for proofreaders of the C & M Bulletin so you may have to put up with a poorly edited bulletin for a little longer.

If agreeable, we could arrange for the proofreading to be done in your sign shop where you have a new $1 dictionary.

J. A. Waller, Chief Engineer
Construction and Maintenance

IN MEMORIAM

Earl L. Nelson, veteran maintenance employee, fell under the wheels of a distributor and was instantly killed September 24, 1951, while attempting to lower or adjust the tachometer wheel. This accident occurred on F. M. 1528 near Klondike.